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ARMY STRATEGIC PLAN FOR CIVILIAN PERSONNEL MANAGEMENT RESEARCH: A ROADMAP FOR THE FUTURE

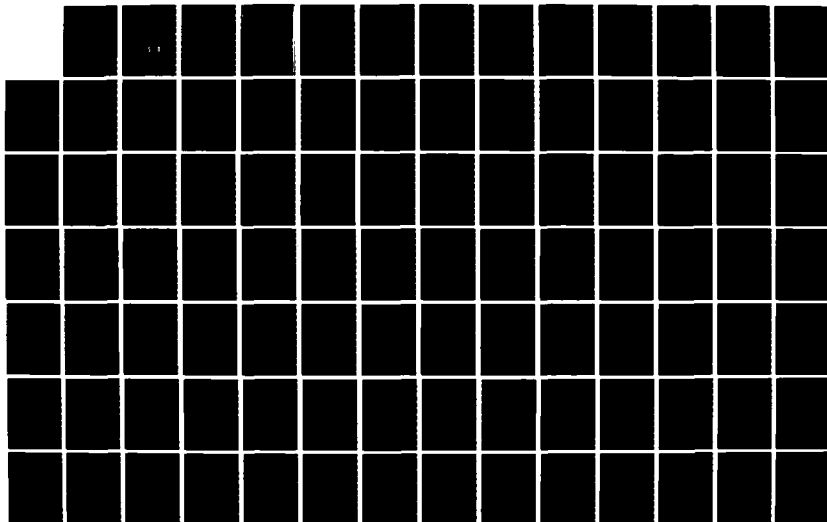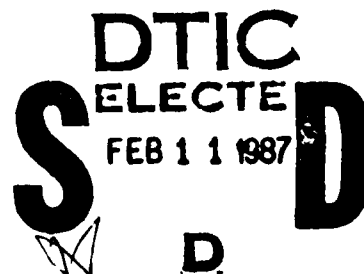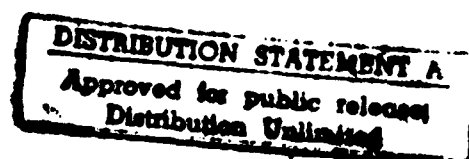Prepared for: Headquarters, Department of the Army
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The Army Civilian Personnel Roadmap was designed to respond to the need for a strategic plan to guide future research on the Army's 485,000 member civilian personnel workforce. The Roadmap provides a framework for capturing and analyzing data needed to formulate and implement effective management policies and programs that address the objectives of the Army's civilian personnel system. In addition, this report includes a detailed model for setting priorities among over 150 research suggestions contained in the Roadmap, as well as a management plan to assure a structure for ongoing research management.

The principal objectives of the Army's civilian personnel program were documented based on interviews and discussions with Army policy staff. These objectives were:

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° Maintaining a qualified and representative workforce tailored
  to Army needs, including

  - Recruiting needed personnel,
  - Managing both retention and separation;

° Maximizing the productivity of the civilian workforce, including

  - Developing supervisory and non-supervisory personnel,
  - Motivating personnel,
  - Maximizing the efficiency of policies, procedures, and processes;

° Ensuring the most effective utilization of civilians within the Army,
  including

  - Determining appropriate civilian functions in peacetime and
    during mobilization,
  - Ensuring effective military-civilian working relationships,
  - Ascertaining future civilian workforce needs.

The stated objectives were used as the basis for semi-structured interviews and
focus groups. Each study participant was requested to offer suggestions about
knowledge and information needs pertinent to accomplishing the specified
objectives. Subsequent analysis of the interview data yielded a series of eight
research arrays. These arrays are segmented into a series of sequentially-
ordered phases of research; within each research phase are a series of more
specific research areas. Taken as a whole, the arrays provide logical
sequences of research activities which will lead to the generation of the
information required to accomplish the Army's civilian personnel objectives.

For each research phase, the report includes a background statement which
discusses the context in which research suggestions were offered, and a
descriptive summary of existing literature in the area.

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EXECUTIVE SUMMARY

The Army Civilian Personnel Roadmap was designed to respond to the need for a strategic plan to guide future research on the Army's 485,000 member civilian personnel workforce. The Roadmap provides a framework for capturing and analyzing data needed to formulate and implement effective management policies and programs that address the objectives of the Army's civilian personnel system. In addition, this report includes a detailed model for setting priorities among over 150 research suggestions contained in the Roadmap, as well as a management plan to assure a structure for ongoing research management.

Caliber project staff worked in conjunction with a Study Advisory Group (SAG) made up of representatives from the Civilian Personnel Directorate, the Army Materiel Command, the Army Research Institute, the Civilian Personnel Division for the U.S. Army Europe and the Seventh Army, and key manpower, management and budget organizations within the Department of the Army Headquarters.

Based on interviews and discussions with the members of the SAG, the principal objectives of the Army's civilian personnel program were documented. These objectives were:

- o Maintaining a qualified and representative workforce tailored to Army needs, including

    - Recruiting needed personnel,

    - Managing both retention and separation;

- o Maximizing the productivity of the civilian workforce, including

    - Developing supervisory and non-supervisory personnel,

    - Motivating personnel,

    - Maximizing the efficiency of policies, procedures, and processes;

- o Ensuring the most effective utilization of civilians within the Army, including

- Determining appropriate civilian functions in peacetime and during mobilization,

- Ensuring effective military-civilian working relationships,

- Ascertaining future civilian workforce needs.

Using the stated objectives as the basis for creating an open-ended interview guide and a focus group protocol, Caliber staff conducted interviews with over 65 individuals in the Washington, D.C. area, Germany, Ft. Sill, Ft. Stewart, and Aberdeen Proving Ground. Each study participant was requested to offer suggestions about knowledge and information needs pertinent to accomplishing the specified objectives. Subsequent analysis of the interview data yielded a series of eight convergence charts which depict research arrays. These arrays are segmented into a series of sequentially-ordered phases of research; within each research phase are a series of more specific research areas. Taken as a whole, the arrays provide logical sequences of research activities which will lead to the generation of the information required to accomplish the Army's civilian personnel objectives.

For each research phase, the report includes a background statement which discusses the context in which research suggestions were offered, and a descriptive summary statement of some of the literature already available in the area.

Some of the issues most frequently mentioned by interviewees as needing research included:

o Timeliness of hiring procedures

o Recruitment of senior level minorities and women

o Career development paths

o Simplification of classification, promotion, and hiring procedures

o Military management of civilians

o Relationship of CPO's to line management.

At this stage of development, the Roadmap provides a framework for future research. In order to convert it into a living document that guides research activities, the research suggestions need to be prioritized and a program of *specific research projects needs to be designed.* Chapter IV offers a prioritization model, points out some of the difficulties inherent in any prioritization process, and recommends a task plan for accomplishing prioritization goals. Chapter V presents a research management plan which consists of seven components, including the selection of research projects, evaluation of research findings, updating of research plans, and dissemination of research results.

Included as Appendices are a list of references for the existing literature cited, a list of study participants, and copies of the interview and focus group schedules.

I. INTRODUCTION

I. INTRODUCTION

BACKGROUND

This "Roadmap," a strategic plan for identification, prioritization, and management of research activities, was developed for the Department of the Army's Civilian Personnel Program (DAPE-CPP), which has policy responsibility for the Army's 485,000 civilian workforce.

The Roadmap is based upon information gathered in the course of open-ended personal interviews and focus groups held with a diverse array of both civilian and military personnel over a 10 month time period. The Roadmap identifies a series of research areas ranging from basic to applied research in eight different topical areas. For each research area, a brief background statement is presented, identifying significant issues, frequently with direct quotations from the interviewee. In addition there is a section entitled "Existing Knowledge" for each research area which discusses related research endeavors. The final chapters of the Roadmap contain a detailed outline of a model for prioritizing research areas, the next logical step in the process, and a research management plan which is designed to facilitate dissemination of research results and to insure that the Roadmap becomes a dynamic, living document to guide future research.

The primary purpose of Roadmap research is to provide the Army's civilian policy and managerial personnel with a systematic framework for developing a knowledge base which can lead to improved management of the civilian personnel workforce.

PROJECT OVERVIEW

The research areas contained in this document are designed to support the major goal, objectives, and sub-objectives of the Army's civilian personnel program. This hierarchy of objectives was identified through a series of interviews with Army policy level personnel and then modified and confirmed by the Roadmap's Study Advisory Group (SAG). The SAG was chaired by the Director of Civilian

Personnel and included representatives from his office, the Army Materiel Command, the Army Research Institute, USAREUR, and other organizations within the Department of the Army (see appendix for members). Research or knowledge needs, based upon each objective, were then elicited from a wide range of participants which included both military and civilian personnel, from headquarters and field operating agencies, from installations in the CONUS and USAREUR. The majority of personal interviews were held with senior ranking personnel, both civilian and military, while focus group participants were more junior in grade, both General Schedule (GS) and Wage Grade (WG) workers.

Based on the information obtained from the policy-level personnel, the goal, objectives and enabling objectives of the Army's Civilian Personnel program were organized into a Relevance Tree (see Figure I-1 on the following page). Three major objectives were identified. The first, **to maintain a qualified and representative workforce tailored to Army needs**, includes three enabling objectives: (1) recruiting of needed personnel; (2) managing retention/separation to meet needs; and (3) developing supervisory and nonsupervisory personnel. Personnel development is also related to the second major objective, **to maximize productivity of the civilian workforce**, which also includes the sub-objectives of (1) maximizing efficiency of policy and procedures and (2) motivating personnel. Finally, **to ensure most effective utilization of civilians within total Army**, includes (1) determining appropriate civilian functions in peacetime and during mobilization and contingencies; (2) ascertaining future civilian workforce needs; and (3) ensuring effective military-civilian working relationships, an issue that also affects productivity.

For purposes of analysis, these areas were arranged in eight research arrays based on each of the eight enabling objectives (or sub-objectives) as follows:

- Recruitment
- Retention
- Personnel Development
- Organizational Productivity
- Motivational Productivity
- Military-Civilian Relationships
- Civilian Functions
- Future Civilian Workforce Needs.

FIGURE I-1

GOAL, OBJECTIVES AND ENABLING OBJECTIVES OF
THE ARMY CIVILIAN PERSONNEL PROGRAM
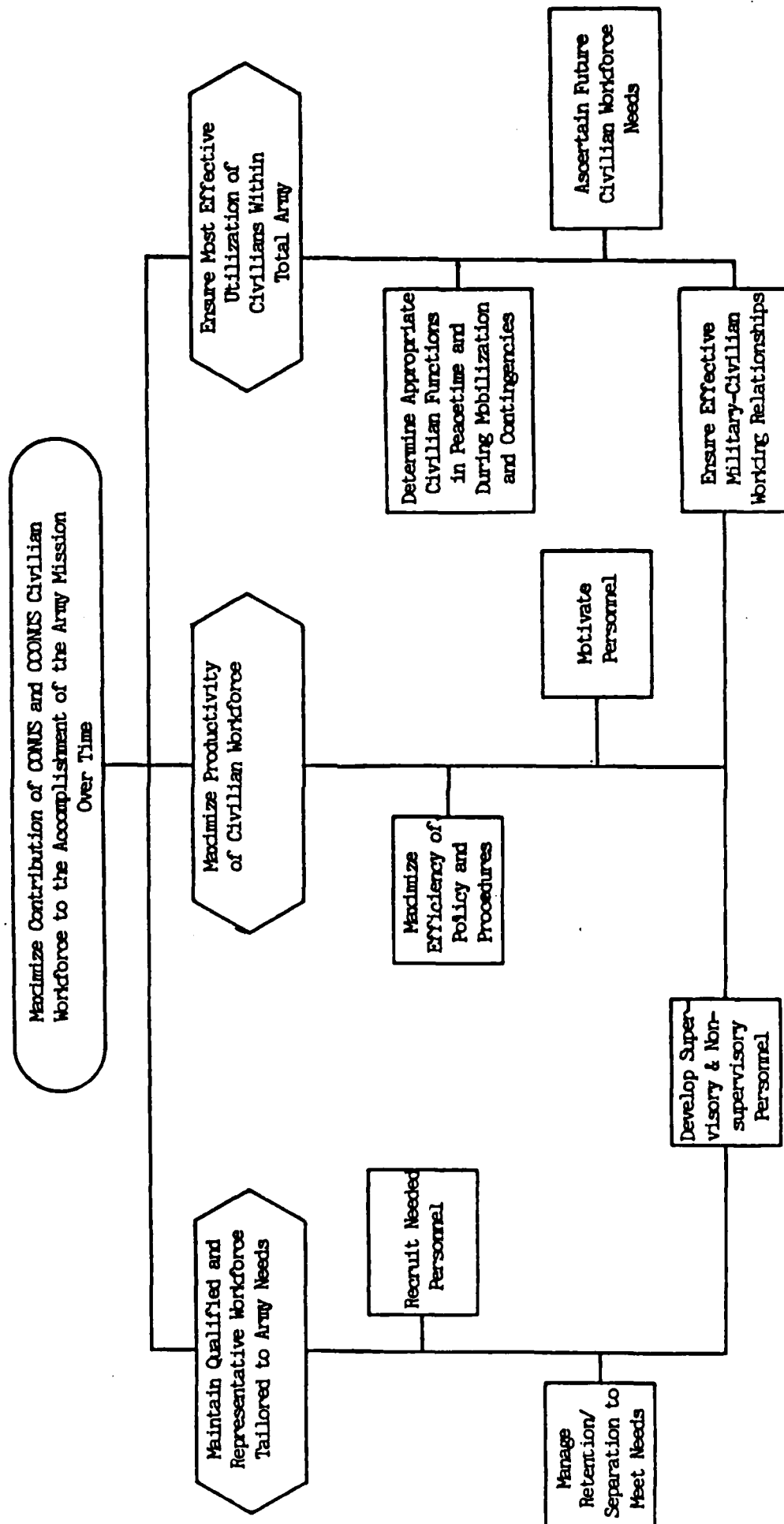
Within each research array a series of research phases are described in a sequential flow. For each research cluster within each phase, a background statement is provided which describes the context of the research. Each phase also includes brief summaries of related research and identifies knowledge gaps where relevant research does not exist or could not be located. This information should be helpful in determining the nature of specific research projects that might be conducted as well as the relative need for new research to address the issues raised.

As is the case with all Roadmaps at this stage of development, there are distinct limitations in terms of the conciseness of the scope of potential research projects. As the reader will quickly note, research areas are highly diverse, thus, any area might constitute a series of projects or be subsumed under larger projects. Each area is thus not to be interpreted as one specific research project. Further, the research arrays represent a synthesis both of research suggestions as they were presented in the course of the interviews and the logically preceding or superseding corollaries of those suggestions. No attempt was made to evaluate the feasibility of research ideas in terms of either funding requirements or political expediency. Recommendations for addressing these issues are addressed in the section on Prioritization.

This document contains six sections. Section I briefly describes the background and overview of the project. Section II discusses the methodology used to develop the Roadmap, and some of the themes and patterns which emerged in the course of the interviews. Section III consists of charts of the eight research arrays, a discussion of the background context of the research phases, and a summary of the existing knowledge pertaining to each phase. Section IV presents a model for prioritizing research suggestions and Section V presents a strategy for research dissemination and on-going research management. The last section contains the full citations for the material referenced in the existing knowledge sections. Appendix A includes a list of the individuals who made up the Study Advisory Group and other study participants. A copy of the interview instruments used to elicit research suggestions is included in Appendix B.

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II. METHODOLOGY

II. METHODOLOGY

RESEARCH PLAN

The framework for capturing and analyzing the data needed by the Army in order to develop a knowledge base for more efficient management of its large civilian workforce was created in consultation with the Roadmap Study Advisory Group. It consisted of the following steps:

- Eliciting and charting into a Relevance Tree the main goals and key objectives of the Army civilian personnel system;

- Identifying key players in the management and personnel arena in different Army organizations;

- Developing an open-ended personal interview schedule and a focus-group format which ascertained the information and research needs pertinent to the carrying out of the objectives elicited in the first step;

- Analyzing the universe of identified research needs, supplementing them where necessary so as to organize them into logical sequential arrays;

- Assessing the pertinent and readily-available research findings related to the identified knowledge needs.

- Devising a prioritization model, which includes input from policy and operations personnel, but which can be achieved with a minimum of time and cost; and

- Preparing a research management plan which creates an efficient research program structured to the Army's needs.

SPECIFICATION OF OBJECTIVES

The first step in developing the Roadmap research arrays was to elicit the goal and objectives of the Army civilian personnel program. The resultant hierarchy or Relevance Tree represents the primary responsibilities of the civilian personnel function. It was created as a result of examining background materials made available to the project staff and by consulting with each member of the Study Advisory Group.

Once a draft hierarchy was constructed, it was presented to the SAG and modified in accordance with their suggestions and comments.

The hierarchy of goals and objectives is depicted in Section I, Figure I-1. This Relevance Tree was the base upon which the interview schedule and focus group format was designed to elicit knowledge needs in those designated areas. This method was used in order to insure that information needs were directly and specifically tied to the programmatic tasks of civilian management.

IDENTIFICATION OF RESEARCH NEEDS

PARTICIPANT SELECTION

With guidance from the Study Advisory Group, a set of individuals and groups of individuals totaling approximately 65 people were selected to contribute to the identification of research needs through individual interviews and focus groups.

The selection was based on the assumption that diversity of experience and diversity of perspective would enhance the quality of the data.

Participants were thus drawn from a series of different Army communities: the military in Headquarters, CONUS installations and USAREUR; civilian line managers, staff and personnelists, and more junior-ranking scientists and engineers, administrators, and wage-grade workers. The last three categories of participants were interviewed in focus groups at Ft. Sill, Ft. Stewart, and Aberdeen Proving Ground.

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These individuals constitute a purposive rather than a random sample. The more senior civilian personnel were chosen on the basis of their wide knowledge and experience with management and personnel issues, both from a headquarters and a field perspective. They also represent different MACOMS. Active-duty military were interviewed because of their experience managing a large population of civilian employees; junior personnel were deliberately added to the population in order to capture their unique perspective on the civilian personnel system.

A letter from the Director of Civilian Personnel was sent to each participant, explaining the nature of the Roadmap project and requesting their time and cooperation. A copy of the Relevance Tree accompanied the letter. The list of participants can be found in Appendix A.

INSTRUMENT DESIGN

A semi-structured, open-ended interview guide was developed, pre-tested and modified based upon the set of objectives developed in consultation with the Study Advisory Group. For each objective, questions were asked in order to find out:

- What specific additional information or research, if any, the Army needed in order to accomplish the objective;

- If the respondent knew of any already existing research pertinent to the objective; and

- If there were important research needs which had not been brought up in the interview.

A copy of the interview guide is included as Appendix B.

INTERVIEWS

The response rate to the request for interviews was 100 percent. The interviews were conducted over a period of eight months, including a four-month hiatus while funds were approved for travel outside the Washington, D.C. area. The majority of the individual interviews were conducted in-person in the Washington area. Four personal interviews and one focus group were held at each of three sites CONUS but

outside Washington, and 10 interviews were conducted in USAREUR in Heidelburg and its vicinity. In many cases the designated study participant invited colleagues to join in the interview or had collected research suggestions from other staff prior to the interview so that more than 65 individuals' comments make up the interview data.

Although the time originally requested for the interview was one hour, the majority of the study participants spent more time with the interviewer, and focus groups ran over two hours in some instances. In addition, some participants sent or called in additional information subsequent to the interview or discussed available research with the bibliographer on the project. The participants offered a wealth of information and had carefully thought through their responses.

INTERVIEW OVERVIEW

One of the purposes in going outside the Washington, D.C. area for data was to capture a diversity of perspectives which might have been missed from a concentration on a single locale. A comparative analysis between Washington and non-Washington area interview data revealed both common concerns and concerns unique to the area.

For each of the objectives, there were a set of common concerns running through the majority of the interviews, in all locales, as listed below:

- Recruitment: the amount of time it took to locate, select, and hire a qualified applicant;

- Retention: the impact of changes and of uncertainties in the civil service system on skilled personnel, particularly within the Scientist and Engineer and the Computer Science job series categories;

- Separation: the amount of managerial time and documentation necessary to fire personnel and the impact on the morale of other employees;

- Personnel Development: the need for a structured and predictable series of career paths tied directly to training plans;

- Policies/Procedures: the cumbersomeness of the merit appraisal system;

- Motivation: the importance of different variables, e.g., compensation, benefits, recognition, satisfying work, physical surroundings;

- Mobilization: the clarification of procedures regarding both civilians and contractors;

- Future Workforce Needs: no systematic pattern of responses;

- Military-Civilian Relationships: the need for better understanding of the civilian personnel system on the part of military managers.

Of those concerns emphasized more in one locale than another, respondents in the Washington area tended to focus on:

- issues concerning policy and promulgation of policy;

- career management concerns; and

- the need to quantify and document anecdotal knowledge in order to justify policy changes.

In USAREUR, specifically in Germany, interview data emphasized:

- the complexity of a series of subsystems of the civilian personnel system and the tensions which result from this complexity;

- a concern with high levels of turnover in the lower grades and "homesteading" in the higher grades; and

- the need for policy personnel at Headquarters to be aware of the personnel context OCONUS.

Local installations reiterated concerns about:

- the impact of contracting-out processes in general and the Commercial Activities reviews in particular;

- the need for the development of managerial training for first line supervisors; and

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- the position of Non-Appropriated Fund employees.

A decision was made to integrate all the interview data into the same series of research arrays rather than to develop three separate sets of arrays, on the basis that the representation of Department of the Army research needs was the appropriate focus for this Roadmap. The "background" sections of the research clusters note where some of the concerns originated.

ANALYSIS

The Roadmap interview process consisted of asking questions about what questions needed to be asked and answered in order to help the Army to reach its civilian personnel objectives. Since this is not commonly done in interviewing and because the majority of the study participants are skilled in areas other than research formulation, the wealth of raw data contained in the interviewing sheets needed much reexamination.

The three interviewers worked together closely to assure that similar research suggestions were categorized uniformly and correctly by area. The data from the interview guides were broken down into small units and then reintegrated and synthesized into more general categories. In many cases, "information needs" had to be translated into researchable concepts. In other cases, a decision had to be made about whether or not an idea or suggestion or comment was in fact researchable; if not, the material was eliminated.

Although the content of research ideas or suggestions were not substantially changed, the categorizations made by study participants were often revised. A research suggestion made by one study participant addressing productivity might have been identical or very similar to a suggestion made by another participant while discussing the retention objective. Project staff then made a decision about where the suggestion best fit within the Army's civilian personnel objectives.

Once the categories were established, a convergence chart technique was used to display those categories or areas in a logical and sequential order. This technique was used in prior Roadmaps constructed for Navy Civilian Person-

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nel and Family Support Programs (1983-84). It is a modification of a model first developed by the National Cancer Institute (1980) for planning biomedical research programs. Research categories are arranged in a series of arrays which depict research program elements in a hierarchy of phases, areas and individual projects, ordered on the basis of research logic. Decision points are indicated so as to make clear the role of one set of research activities in providing knowledge essential to further research activities or objectives. It should be noted that Project Staff inserted research areas which logically preceded or superseded those suggested by the interview data.

Because the nature of biomedical research is in many ways quite different from the nature of the research needed in the civilian personnel area, the modification of the technique was substantial. The primary difference is that this Roadmap does not always force personnel policy research to the completion of one phase in a research array before work could be begun in the next phase in the sequence. For example, a number of the research areas which occur in the "Issues" phase of the eight arrays can potentially be addressed without the prior "Baseline" phase research results. On the other hand, those phases concerned with testing and evaluating strategies must be built upon work in the previous phases, which develop or identify strategies. Of course, Roadmap research should proceed sequentially in an ideal world (i.e., if there were unlimited funding and research personnel available).

ASSESSMENT OF EXISTING KNOWLEDGE

The collection of civilian personnel research materials began shortly after initiation of the project. The Defense Technical Information Service was searched for sources, and materials were collected from DAPE-CP staff members and other Army personnel. The interview sessions were also used to collect references and, in some instances, material from the study participants. Once the research arrays were drafted, a targeted search of existing literature keyed to identified research areas was conducted to determine the information that already exists and to ascertain significant gaps in the literature.

The research arrays were used to structure the reference materials previously collected. Available bibliogra-

phies were consulted and pertinent sources from them were organized according to their fit with the research agenda specified in the Roadmap. A search was made of the holdings of the library of the Office of Personnel Management that followed-up on particular citations previously noted as well as the items of research needs identified under the research arrays.

Because of limited resources for this literature search and the extensive coverage of the research roadmap, no claim can be made that this survey of the existing literature is exhaustive. Nevertheless, this literature search was sufficiently extensive to provide "starting gates" for further research on the majority of the lines of inquiry identified in the Roadmap.

In prioritizing and delimiting the universe of potential research to be cited, the major emphasis was placed upon locating references most pertinent to Army civilian personnel as a specific population. The secondary emphasis was placed upon finding material relevant to all DoD civilian personnel. Lastly, some literature sources were located which address the Federal personnel workforce as a whole. Although there is a large body of literature dealing with personnel and managerial or administrative issues in the United States in general as well as internationally, this body of literature was not tapped, except for specific references mentioned during the interview process, and selected, well-known reviews of the civilian literature.

It should also be noted that a Modernization Task Force, established by the Army in 1986, has been studying a series of Army civilian personnel issues; in many cases these issues are identical to those raised by Roadmap respondents. The Task Force, which is made up of 15 military and civilian individuals, is tasked with developing a broad set of recommendations for instituting changes within the civilian personnel system. These recommendations will encompass both procedural and legislative-level innovations. Although the reports from this Task Force are not yet available, it should be noted that their findings will add substantially to the existing knowledge cited here. References to work in progress are included in the text where appropriate.

The next section, organized according to the eight separate research arrays, presents an elaboration of the research concerns extracted from the interview analysis process.

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III. RESEARCH AREAS

III. RESEARCH AREAS

INTRODUCTION

This section discusses the results of the interviews conducted to elicit the primary research areas which must be addressed to meet the overall program goal and specific objectives of the Army civilian personnel policy organization. The research areas identified throughout the interview process were categorized according to the eight enabling objectives designated in the Relevance Tree.

- Recruitment

- Retention/Separation

- Personnel Development

- Organizational Productivity

- Motivational Productivity

- Military-Civilian Relationships

- Civilian Functions

- Future Civilian Workforce Needs.

Convergence charts have been designed for each of the eight objectives listed above. Each chart is comprised of a logical sequence of research phases, which moves as a linear array from basic to more applied work. After each phase of research, a judgment can be made as to whether there is sufficient knowledge to proceed or whether more data must be collected.

Research areas are organized into four generic phases. The first phase of research, Establish Baseline Measures, includes research necessary to establishing the magnitude of a problem or measuring the extent to which the sub-objective is being met. Generally, without sufficient knowledge or evidence in these areas, further research cannot be justified or successfully conducted. For example, research aimed at enhancing retention would not make sense in the absence of data indicating that retention of quality personnel is a

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problem. Similarly, research on productivity improvement could not proceed effectively without adequate measures of personnel productivity.

The second phase of research is concerned with understanding the nature of the problem sufficiently so that solutions can be conceptualized. Phase III research areas generally a e aimed at gaining the understanding necessary to design specific strategies to meet the objective more effectively (e.g., improve employee motivation or skills, or attract professional women and minorities). Phase IV research is concerned with evaluating current strategies or model programs/policies or with testing and evaluating new ones based on Phase III research.

Within each research Phase, several research areas are described and discussed. Where appropriate these research areas are clustered according to intermediate objectives. For example, within the Recruitment Array, three sub-arrays (designated by capital letters) are presented based on intermediate objectives leading to the ultimate successful recruitment of quality personnel into the Army civilian personnel workforce. These include:

a. Screening and selecting qualified candidates;

b. Providing attractive compensation and job conditions;

c. Employing effective marketing strategies.

Where the research required in one phase for one sub-array has implications for a different sub-array in a different phase, this interdependence is depicted with arrows on the Convergence Charts. Generally the research areas listed within each sub-array within the same phase can proceed independently of each other. In some cases the research areas should be viewed as sequential steps. Generally these cases are self-evident; we have not attempted to depict these sequences graphically, simply to maximize the readability of the Charts.

It should be noted that while each of the eight objectives, under which research areas are arranged, are independently important to the Army mission, the strategies for accomplishing those objectives are interactive. Consequently, the research areas in each array may overlap, and research results in one array may have implications for another objective. Research designed to support two of the

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objectives, Develop Personnel and Ensure Effective Military-Civilian Relationships, are explicitly identified in the Relevance Tree as contributing to multiple objectives. There are other specific research areas which affect more than one objective. For example, compensation issues might be analyzed to determine their effect on recruitment, retention, or productivity. Even though the specific issues to be examined may be somewhat different in each case, it is certainly possible and may be highly desirable to incorporate all three concerns into a sequence of research projects on compensation. The proposed prioritization process (Section IV) incorporates steps to identify desired research projects or sequences of projects which maximize opportunities to meet multiple objectives.

In summary, the Convergence Charts and discussion of research areas contained in this section present logical sequences of research activity areas designed to assist the Army to reach its civilian personnel program objectives. Research results are seen as the basis for policy recommendations, program development and/or training and technical assistance throughout the Army. Policy recommendations stemming from research findings might also be directed outside the Army to such organizations as the Office of the Secretary of Defense, the Office of Personnel Management and Congress.

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RECRUITMENT

OVERVIEW

For a number of the individuals interviewed, recruitment was designated as the "number one issue", at least partly because of the perception that terminating incompetent employees is so cumbersome. Given the time-consuming nature of separation, it behooves managers to make every effort to select high-quality applicants.

Some individuals stressed the selection aspect of the recruitment process as being most critical, while others were concerned with the formation of the applicant pool from which they had to select. For most interviewees, the timeliness of the hiring process was also an issue, and impacted upon both organizational productivity and motivation.

The research areas related to the Recruitment objective are depicted in the research array on the next page.

PHASE I: ESTABLISH BASELINE MEASURES

Study participants noted a need to conduct more basic research in five areas before beginning research on specific recruitment issues. These areas were:

1. Develop measures of quality and high performance potential;

2. Identify the current selection criteria used;

3. Assess the quality of the current recruit population;

4. Determine the Department of the Army's current recruiting. success for key occupations relative to other government organizations; and

5. Measure time lags for filling vacancies by position type.

RECRUITMENT RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES	II. ANALYZE RECRUITMENT ISSUES	III. IDENTIFY POTENTIAL RECRUITMENT STRATEGIES	IV. TEST/EVALUATE PROMISING STRATEGIES
1. Develop measures of quality/high perform-ance potential	A. Assess selection issues	A. Develop selection strategies	A. Test screening tools and procedures
2. Identify current selec-tion criteria	1. Identify candidate characteristics asso-ciated with high per-formance	1. Develop valid selec-tion criteria and procedures	1. Evaluate quality of candidates with new measures
3. Assess quality of current recruits	2. Develop profiles of successful performers in overseas positions	2. Identify barriers to optimal selection & identify alternative remedies	2. Evaluate new proce-dures for ease of use and applicability
	3. Identify constraints on selection of most qualified applicants	3. Identify procedures to clarify CPO & line managers selection responsibilities	
	4. Assess appropriate-ness of current selection criteria		

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RECRUITMENT RESEARCH ARRAY
(continued)

I. ESTABLISH BASELINE MEASURES

4. Determine current recruiting success for key occupations
5. Measure time lags for filling vacancies by position type

II. ANALYZE RECRUITMENT ISSUES

B. Assess job attractiveness issues
1. Analyze key factors influencing acceptance decisions, including mobility requirements, compensation, work environment, civil servant image
2. Analyze key factors influencing acceptance decisions for minorities and women

C. Assess marketing issues
1. Determine importance/impact of word of mouth advertising
2. Analyze impact of timeliness of offers on recruitment success
3. Identify competition for minority and women candidates
4. Identify barriers to filling overseas vacancies

III. IDENTIFY POTENTIAL RECRUITMENT STRATEGIES

B. Develop strategies to enhance job attractiveness
1. Develop options to increase starting salary flexibility
2. Identify incentives for "hardship" sites

C. Develop marketing strategies
1. Identify barriers to expeditious hiring and develop alternative procedures
2. Identify successful strategies for reaching and attracting minorities and women at higher grade levels
3. Identify strategies to enhance civil servant image
4. Identify models for college cooperative programs and other outreach activities
5. Identify most promising sources of recruits and marketing strategies for overseas positions

IV. TEST/EVALUATE PROMISING STRATEGIES

B. Test selective changes in incentives, job conditions

C. Test/evaluate marketing strategies
1. Evaluate comparative effectiveness of current recruiting strategies
2. Test model hiring procedures
3. Test model recruiting strategies for minorities and women
4. Test image enhancing techniques
5. Test college program models
6. Test model overseas recruiting strategies

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Successful research in these areas would enable the Army to determine the true extent of current recruitment and selection deficiencies and prepare for more targeted research on the nature of problems and prospective solutions.

Background

Interviewees expressed interest in conducting research to determine what constitutes a productive and effective employee in different job series, and in developing criteria to aid in determining how to measure success in particular types of jobs, including technical, administrative, and managerial.

A related concern was to identify the types of criteria now used, so that the Army can assess whether they are valid. Some interviewees suggested that entirely new job descriptions and qualifying criteria may be needed in some areas. For example, one post commander pointed out the need for individuals working in the child care activities at his post to be able to relate to the public, be consumer-oriented, and be able to "sell" a program. He pointed out that none of these attributes are mentioned in any job description nor do they form the basis for selection. Another example of a position where job descriptions (and hence selection criteria) may be outdated is security guards, who may have to deal with terrorist threats, but who have no training or background for such work. Another area where concern about operant selection criteria was expressed was the computer science field.

A peripheral but related issue raised by some study participants was what they saw as unclear goals in the recruitment process: a question of whether the U.S. government is to be a "social" employer or a "hard-hitting" one, one that stresses a representative workforce or a highly qualified one. Others pointed out that there may not be any inherent contradiction in these goals, that a workforce can be both representative and competent.

Most participants expressed the view that the recruitment and evaluation process was overly elaborate, with many of the procedures developed to protect against lawsuits from disgruntled applicants, rather than to assist managers in finding quality people. They pointed out a need to research

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ways to simplify the process and do it faster without legal violations, based upon a study that determined the reasons for the delays in the process as it now exists, and surfaced impediments not now realized. Such research would also include a systematic overview of Federal court decisions relating to the personnel selection process. The Modernization Task Force established by the Army in 1986 is examining this concern.

Representatives of various Army organizations pointed out recruitment issues relevant to their particular organizations. For example, the recruitment of GS-12 and above research specialists for the Army Research Institute (ARI) was seen as problematic: ARI representatives did not feel it could compete financially with private industry in some specialties, nor could it offer a work environment as "congenial" as that of some academic research or private employers. These difficulties were compounded by the length of time required for hiring compared to that taken by a university or research contractor. Potential employees were "lost" because of the slowness of the hiring process.

Army personnel, both civilian and military, expressed interest in collecting comparative data, i.e., compared to the quality of individuals hired by the Department of Health and Human Services or the State Department, do the "best and brightest" come into the Army? If not, where do they go within the government, and how can the Army compete successfully with these other agencies? Asked one participant, "Are we getting the cream of the crop or the dregs of the civilian pool?". A related issue was the use of the "stopper" lists, which may enable less qualified individuals to be considered for jobs based upon seniority. At least one manager complained that he had "never gotten a satisfactory person" from the lists, and was forced to take people he didn't want.

Finally, one of the concerns most often raised during the interviews was that of the time consumed during the recruitment process. The estimates of how much time it took varied widely, from three months to "forever". There is a need, before any additional work can be done, to be able to accurately determine, perhaps by position type, how much time it does in fact take to fill a civilian position, both OCONUS and CONUS.

Existing Knowledge

The literature search identified information with regard to selected recruitment and selection research areas. The Air Force Human Resources Lab (1984) has prepared a state of the art review of personnel selection strategies based on application of the decision-theoretic approach. It noted that traditional strategies were too limited to be effective. Bres et al. (1979) reported on the development and testing of aggregate manpower and personnel models for determining recruiting requirements for large Navy shore activities.

The Office of Personnel Management (OPM) provides information on accession rates in its Monthly Release: Federal Civilian Workforce Statistics and since 1976 OPM has published annually Equal Employment Opportunity Statistics: Federal Civilian Workforce Statistics which provides the numbers and percentages of Minority Group Designation (MGD) full-time employees by agencies. OPM (1981a) reported indices of under-representation of MGD groups in federal agencies. Some other relevant OPM studies on selection issues have been conducted by Hannan (1980), Karren (1980), Lilienthal (1980), Mento (1980), and van Rijn (1979) and (1980).

McGonigal (1981) compared the composition and compensation patterns of minority and female scientists and engineers to their white male counterparts in the Department of Defense. Minority and female participation in DoD was also examined by the Defense Manpower Commission (1976). Hakel (1986) and Dunnette and Borman (1979) have also reviewed personnel selection issues.

The literature search did not identify any studies which determined current recruiting success for key occupations relative to other government organizations.

As part of the annual Civilian Personnel Management Statistical Reporting Requirement conducted by HQDA, DCSPER, information is gathered on time lags for filling vacancies, although little rigorous information is available on the predictors of the amount of time required.

PHASE II: ANALYZE RECRUITMENT ISSUES

A. Assess Selection Issues

Background

Interviewees who emphasized selection as the most important part of the recruitment process suggested that research be done to:

- Identify candidate characteristics associated with high performance;

- Develop profiles of successful performers in overseas positions;

- Identify underlying constraints on selecting the most qualified applicants; and

- Assess the appropriateness of the current selection criteria for a number of different positions.

The first suggestion, identify characteristics associated with high performance, is a logical follow-on to research which develops measures of high performance potential.

The second research idea stems from the question: "What kinds of people make the best recruits for overseas positions?". The question does not have to be limited to overseas personnel, but because of the amount of money spent in getting and maintaining personnel in OCONUS slots, it is seen as vital that there be some ability to predict success in an overseas context and avoid early returns based upon inability to adapt to a foreign context. Research might indicate potential indicators which are quite distinct from those needed for a similar position CONUS, and could begin by identifying characteristics of those now considered by supervisors or peers to be highly adapted to a foreign situation or even to a specific cultural context. It may or may not be the case that an individual who performs well in Germany is equally able to function well in Korea, for example.

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A number of barriers to selecting highly qualified potential applicants were pointed out by interviewees. Overseas, concern was expressed that a simple lack of information about overseas employment constitutes a "barrier", particularly since recruiting trips to CONUS are not possible with the frequency they once were. What would be the impact of publicizing German employment possibilities to a CONUS audience? A potential barrier, of unknown proportions, might be a fear of terrorism or more generally, a fear of the "unknown" on the part of potential applicants for overseas posts.

The focus group interviews with relatively recently hired applicants identified perceived barriers from the applicant's rather than the manager's perspective. To those outside the system, the application process has "no clear guidelines, no central place to call, no way to keep track of your application once it gets into the system". The young engineers we spoke with had all in fact made it through that maze, but knew of others who had sought work elsewhere after applying for an Army position because of the complexity and time consuming nature of the recruitment process. It is interesting to note that, in a series of interviews with young Civil Service employees conducted by the Washington Post in August, 1986, the same issue arose repeatedly.

Another potential barrier identified in interviews was the perceived contradictions in various regulations concerning the employment of ex-military within the DA civilian personnel system. For example, there are positive practices such as veteran's preference and the numerous jobs which call for military expertise but these are counter-balanced by rules about "double-dipping". The resulting complexity mitigates against a clear position on the role of former military personnel in the civil service system.

<u>Existing Knowledge</u>

The literature search found several studies related to selection issues. Sterling (1980) investigated factors affecting recruitment of federal civilian employees in the Army's VII Corps (overseas). Overseas adjustment was the subject of a Navy Personnel Research and Development Center (NPRDC) (1973) study. A Defense Systems Management School

Paper (1973) addressed constraints which the civil service environment places on recruitment. Atwater et al. (1983a) and (1983b) projected labor market availability which affected recruitment of Navy civilian professionals.

The Office of the Under Secretary of Defense for Research and Engineering (1982) discussed the process cf recruiting scientists and engineers. The Defense Manpower Commission (1976) reported specifically on the process of recruiting physicians.

B. Assess Job Attractiveness Issues

Background

Closely aligned with selection issues was an interest in ascertaining the different routes by which individuals learn about and eventually accept positions within DA. Once those different routes are known, further research might be done which indicates if there are particular routes which result in higher "pay-offs" in terms of both quality and retention of applicants. Research is needed to determine what happens to different groups of people recruited in different ways in terms of their later contributions to the Army.

It was pointed out in a number of interviews that there are a series of key factors which should be examined in trying to determine how people make decisions about whether to work within the Army system. Specific factors mentioned were:

- mobility/rotation requirements
- compensation
- work environment
- the "image" of the civil servant.

There is now a generally-held perception that civilians are reluctant to relocate in the course of their careers. Study participants pointed out that there is no real data at this point to back up or refute that perception. At least one interviewee was convinced that many people were much more willing to be mobile in exchange for higher grade jobs: ". . . this generation of interns is very ambitious." What would happen if, in the course of the recruitment process,

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it was made clear that the Army required greater mobility than other government agencies? Would that cut down the number of qualified applicants or wouldn't it? It is equally possible that mobility would be perceived as a plus rather than a negative factor by many job applicants considering future employment with the Army.

Closely connected to this question is the need to demonstrate empirically that both job rotation and concommitant geographical mobility would in fact enhance productivity and skill levels at various stages in an individual's career. Informants pointed out that there was a general feeling that rotation/mobility correlates with higher productivity, but that this has never been demonstrated. This issue is addressed in the personnel development array, as part of research aimed at increasing productivity.

The issue of compensation was frequently mentioned. Although many study participants saw it as the key factor in successful recruiting, others were less sure how it balanced against other factors. Some argued that entry-level salaries in many fields were competitive with private industry. It became clear that, although many individuals were convinced that compensation is indeed important, there was no data to suggest what role it in fact played in applicants' decisions to accept a position, nor how important it was in relation to other factors.

Another factor brought up in interviews was the question of how important the work environment was to recruiting. "Work environment" is a general term that encompassed quite different ideas, from what might be called "organizational culture" (does the work environment stimulate creativity, provide congenial colleagues, reward individuals in non-financial ways?) to concrete physical surroundings (do individuals choose not to work with the Army because of peeling paint, lack of private work areas, inadequate cooling/heating, etc.?).

One individual pointed out that "greensuit" recruiting efforts very deliberately enhance the image of the soldier, but there is nothing in civilian recruitment efforts that stimulate an interest in or willingness to think about government service as a career choice. A negative stereo-

type of the civil servant is pervasive in the 1980's and may directly impact on recruitment success, but to what extent is unknown.

Of particular concern was a need to analyze those factors which influence the acceptance or rejection decisions made by minorities and women. One hypothesis was that Army positions which require geographical mobility might particularly discourage minorities who do not wish to leave ethnic enclaves or women who choose not to accept a position which would uproot their families or conflict with a spouse's occupational requirements.

The underlying theme of this series of research suggestions was the need to understand and identify those elements which persuade or dissuade potential Army civilians in the recruiting process. It should be pointed out that many of these same elements may be of equal interest in retention/voluntary separation decisions made in the course of an Army civilian's career, as well as elements which impact on both motivation and productivity.

Existing Knowledge

A variety of sources have analyzed similar factors which influence acceptance decisions. Lieutenant General Stansberry (1984) identified both the change from the civil service retirement program to the social security plan and the increasing pay gap as compared to private sector positions as reducing the ability of the civil service to attract high quality employees.

The General Accounting Office (GAO) (1984d) stated that OPM's disinclination to grant pay increases to "special rate" workers has hampered recruitment of top-rated scientists and engineers. The GAO study reported that the starting salary for government engineers was less than half of that offered by private engineering firms. A Joint Logistics Command Panel Report (1981) on civilian engineer recruitment and retention also cited the need for competitive salaries and more attractive promotional opportunities.

McGonigal (1978a) compared compensation offered by DoD with the private sector by age for selected occupations. NPRDC (1981) presented the results of a survey on the effects of high-grade limitations on Navy laboratories.

With regard to minority recruitment, both the Sloan School of Management (1984) and Johns Hopkins (1984) assessed factors influencing careers of minorities employed in high technology fields.

C. Assess Marketing Issues

Background

A number of informants felt that the recruitment process as now conducted by the Army for civilian personnel was too "low-key" -- that recruitment was conducted by "paper pushers rather than head hunters". A general theme that was expounded was that the Army's civilian recruitment process was both passive and reactive. This observation led to one research suggestion to study the present capabilities of Army staffers, and following that, the civilian personnel program should "devise a process to make real employment pros out of the interns we put into the staffing business".

More specific marketing research concepts had to do with:

- Determining the importance and impact of word of mouth advertising on recruitment;

- Analyzing the impact of the timeliness of job offers on recruitment success;

- Identifying the market competition for minority and women candidates; and

- Identifying the specific barriers to filling overseas positions.

In a number of interviews, informants noted that word of mouth advertising by the workforce already in place used to be the most effective recruitment tool the Army had. One interviewee commented that "more and more, employees are unwilling to recommend Federal service as a career to

friends and acquaintances". And it might be added, to their children. Research could ascertain how effective word of mouth marketing is, if it is less effective now than in the past, and why this is the case. This assessment would be part of research on the larger question of "What attracts quality people to a Federal career?".

As mentioned above, time delays in the recruitment process were of major concern to many managers. Although much anecdotal information about time delays was offered, interviewees expressed need for a systematic analysis of the impact of lack of timeliness on recruitment success or failure, e.g., which potential job candidates for which type of positions are "lost" to the personnel pool because of delays in the hiring process? Such a study might focus on specific grades, such as SES; on specific job series, such as computer scientists; or on specific geographical areas, such as Germany.

Another marketing concern brought up in interviews was the Army's recruitment of women and minorities. Based upon the concern that Army personnel reflect the demographics of American society and upon the belief that a representative workforce is a more productive one, there was an expressed need to find and recruit well-qualified women and minorities into senior level (GS13 and above) positions, particularly in technical areas. Research was suggested to ascertain the primary competition for such individuals at the present time, as well as what the competition offered in terms of benefits and career progression. Part of such a study would involve investigating what had attracted the senior-grade minorities and women now working within Army organizations, and what they might suggest in terms of recruiting strategies. These issues are currently being considered by Huston-Tillotson College under an Army Research Institute contract.

Interviews in Germany identified unique OCONUS recruitment concerns. A large number of German citizens began working for the U.S. Army immediately following the end of World War II. As a generational cohort, they constitute a great deal of the institutional memory and the technical expertise of Army personnel overseas. Large numbers of this cohort are now retiring and there was concern about replacing their skills. Therefore, research might be directed

toward delineating the barriers to recruitment of local German nationals in large enough numbers or with the requisite technical experience. There was also, according to interviewees, a number of retired military personnel who would be interested in Federal positions, but recruitment from that source was limited because of Status of Forces agreements with individual countries. A third area of recruitment concern occurred with DoDs educational personnel where, in many cases, career progression is impossible without geographical relocation. Because marketing issues are similar but not identical in CONUS and OCONUS situations, research in the recruitment area would have to be specific to different locales.

Existing Knowledge

Some studies have been done to determine the availability of minority candidates. Haber (1978) examined the racial composition of workers available for hiring. Gastwirth and Haber (1976) considered a definition of the labor market which was useful for equal employment standards. Atwater et al. (1983b) estimated minority group availability for the Navy's civilian workforce.

Overseas recruitment issues were the subject of Headquarters, Department of the Army, Deputy Chief of Staff for Personnel (HQDA ODCSPER) 1969 study which identified some of the difficulties in filling those positions. GAO (1978) reported that DoD was overcompensating its foreign employees and recommended that changes be made to bring benefits in line with locally prevailing practices.

PHASE III. IDENTIFY POTENTIAL RECRUITMENT STRATEGIES

. Based upon thorough analyses of selected recruitment issues such as those discussed in the preceding section, the next step would be to identify specific strategies to strengthen recruitment efforts.

A. Develop Selection Strategies

Background

New selection strategies would stem from a re-examination of current selection criteria and procedures, as well as from identified existing barriers to effective selection.

Such strategies might be tested by civilian personnelists but would have to be agreed upon and include input from managers as well. A recurrent theme in the interviews was the perceived lack of coordination between personnelists and managers in recruitment efforts. From a managerial perspective, the civilian personnel system was not seen to be closely tied to mission requirements of the organization, nor were personnelists seen as accountable to "outside" line managers. Line managers were often convinced that personnelists did not have the technical expertise to select and forward qualified candidates for certain positions, and were sure that personnelists did not see themselves as belonging to a "service organization". At the same time, managers (both civilian and military) did not see themselves as having either the time nor the experience necessary to recruit without CPO support and assistance. Without a clear definition of the respective roles and responsibilities of managers vis-a-vis civilian personnelists in the recruitment process, it may prove difficult to devise workable strategies. The three suggested research areas were to:

- Develop valid selection criteria and procedures;

- Identify barriers to optimal selection process and identify alternative remedies; and

- Identify procedures to clarify CPO and line managers' selection responsibilities.

Existing Knowledge

The literature search did not result in much data pertinent to the development of selection strategies barriers, or CPO selection responsibilities. Sands (1973) applied the costs of attaining personnel requirements (CAPER) model to recruitment and personnel selection problems. In addition, it should be noted that personnel selec-

tions must conform to the Civil Service Commission's Uniform Guidelines on Employee Selection Procedures. Both Quaintance (1980) and Holley and Schanie (1980) have examined these important selection guidelines.

B. Develop Strategies to Enhance Job Attractiveness

Two particular research areas were suggested for developing new recruitment strategies:

- Develop options to increase starting salary flexibility; and

- Identify incentives needed for recruitment to "hardship" sites.

Background

Managers emphasized the need to attract skilled administrators and technicians by more common use of "direct line" authority from OPM and salary elasticity in negotiations with new hires from outside the government. A second area of interest was concentrated research to determine potential new strategies to "lure" skilled individuals to very rural or isolated areas; Ft. Stewart and Ft. Irwin were given as examples.

Existing Knowledge

Strategies to enhance job attractiveness have received attention in the literature. The HQDA ODCSPER (1983) undertook a special review of the special salary rate program. Frisch (1984) set forth two specific proposals to alleviate problems of job attractiveness. He suggested a new GP (government professional) pay classification in addition to the present GS and GM classifications, and the institutionalization of continuous education for engineers to accommodate the knowledge explosion.

With regard to the Executive Exchange program, a bill (H.R. 3002) is pending which would enable participants in this program to earn their private sector salaries.

RECRUITMENT ARRAY (continued)

C. Develop Marketing Strategies

Background

The research suggested by the interviewees to develop strategies to enhance marketing success include efforts aimed at:

- More timely hiring;

- Locating and hiring minorities and women at GS13 and above positions;

- Enhancing the civil service "image", with cooperation from high level civilians in DoD (e.g., Secretary of the Army, Secretary of Defense);

- Identifying more models for coop and "ROTC-type" programs at the university level as an ongoing source of quality recruits;

- Concentrating on cross-cultural marketing for overseas positions, both in CONUS and from host populations, particularly for mid-level positions.

Existing Knowledge

Several studies about affirmative action issues were identified in this literature search. The Army Missile Command (1985) evaluated its centralized college recruitment program that has been designed to attract black scientists and engineers. Triandis and Hui (1983) proposed some steps to counteract the barriers to recruitment of Hispanics.

Bellone and Darling (1980) discussed some of the strategies for implementing affirmative action programs. Charnes et al. (1979) described a set of Navy civilian manpower planning models which accommodate EEO requirements. Burroughs and Niehaus (1976) reviewed the Navy's first EEO models, and Niehaus is continuing to refine these models.

In addition, there is a report on a college cooperative program. Southeastern Center for Electrical Engineering (1982) discusses its summer facility research program. This program enables the Air Force to report its research to

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university, college, and technical institute faculty members. The model, designed to encourage cooperation with non-Air Force professionals, could also enhance the image of civil service personnel.

The evaluation of the special rate salary program by the HQDA DCSPER (1983) found it to be a useful tool in recruitment. It was not used extensively because of the workload involved in maintaining data and preparing submissions. The program was primarily used in the engineering and medical fields where OPM has approved rates for broad occupational groupings.

The Army Missile Command (1985) did evaluate its minority recruitment marketing program. It found that the number of black engineers recruited doubled in the three years since the establishment of its decentralized college recruitment program.

The other potential tests and evaluations were not addressed in the studies identified.

PHASE IV.   TEST AND EVALUATE PROMISING STRATEGIES

Background

A possible final step in the research process would be to select a number of recruitment strategies which have been developed, put them into practice in a limited context, and evaluate the outcome. The MIPs (Model Installation Programs) are potential contexts for testing and evaluating:

- new screening tools and procedures;

- selected changes in job conditions (e.g., work environment);

- comparative effects of different recruiting strategies;

RECRUITMENT ARRAY (continued)

- model streamlined hiring procedures;

- Army civil servant image enhancing programs;

- university programs;

- overseas marketing.

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RETENTION

OVERVIEW

A central question of many respondents in this area was: "Are we losing or pushing out the best and retaining the worst of the civilian personnel workforce?" There was less concern with simply quantifying attrition rates than there was with focusing on the quality and skills of those who did choose to leave and the subsequent follow-on impact on the organization. Questions were asked about the reasons individuals left, where they moved to occupationally, and what could be done to decrease the exit of quality personnel.

A parallel concern was the area of involuntary separations, or terminations, of less effective personnel. The retention and separation research areas are summarized in the Retention Research Array on the following page.

PHASE I. ESTABLISH BASELINE MEASURES OF PERSONNEL TURNOVER

Specific research questions in the baseline research area are:

1. Assess current turnover rates for selected types of positions;

2. Determine characteristics of personnel who leave and those who stay; and

3. Determine impact of turnover rates on organizational effectiveness.

Background

A particular research strategy mentioned was the need to conduct a systematic survey in the retention area. Such a survey would attempt to study not simply how many people were leaving, but who these individuals were, e.g., which job categories they held, and how they were viewed by supervisors in terms of the quality of their work and their skill levels. In general there was less concern with overall retention rates, than with turnover in key positions and

RETENTION RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES OF PERSONNEL TURNOVER

1. Assess current turnover rates in selected areas
2. Determine characteristics of personnel who leave/stay
3. Determine impact of retention rates on organizational effectiveness, especially overseas

II. ANALYZE RETENTION/SEPARATION ISSUES

A. *Assess retention factors*
1. Identify reasons key workers stay or leave, including:
   - compensation/benefits
   - recognition
   - work environment
   - work group relationships
   - family satisfaction
   - organizational culture
   - relocation requirements
2. Identify characteristics of competing employers

B. *Assess separation issues*
1. Analyze barriers to separating non-productive employees
2. Analyze costs and consequences of current separation procedures

III. IDENTIFY RETENTION/ SEPARATION STRATEGIES

A. *Develop compensation/job conditions options*
1. Develop alternative classification systems & compensation/promotion structures
2. Assess overseas incentives offered by private industry, other government agencies

B. *Develop separation options*
1. Assess feasibility of simplified separation processes
2. Determine transferability of military and private sector "up or out" practices
3. Analyze costs of alternative approaches to reductions in force

IV. TEST/EVALUATE RETENTION/SEPARATION STRATEGIES

A. Test selected compensation and job conditions strategies

B. Test alternative separation procedures

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skill areas. Other questions would focus on reasons why individuals chose to leave, where their next jobs were to be and the reasons they gave for their decision to leave.

A potential source of data in this area might be exit interviews -- either formal ones conducted by personnelists, or less formal ones which may be held between the manager and the employee prior to departure. At least one manager pulled out a desk drawer filled with exit interview notes but commented that he had neither the time nor the skill to do a content analysis of such material. It was his opinion that most managers had similar data in some form, which could be valuable as part of a preliminary question-formulating stage of a subsequent survey. Other respondents suggested exit surveys similar to those conducted on military personnel.

A related question had to do with less with individual decisions and more with organizational effectiveness as it might be affected by personnel turnover. This concern stems at least partly from the fact that, from a managerial perspective, personnel "gaps" left open were not filled in a timely fashion. One possible research avenue was to devise ways to measure the cost-effectiveness impact which occurs when, for example, a skilled typist leaves an office and professional staff are then forced to do their own typing at the expense of their other responsibilities. On a programmatic level, there was concern expressed about the possible effects of the Spouse Employment Program on OCONUS organizations. According to informants, this program has an extremely high turnover rate; many low-level entry positions are filled by individuals who quickly move to higher grade levels or who vacate their positions to relocate geographically when their active-duty spouses receive PCS orders. This turnover rate was in distinct contrast to high-grade positions where career progression was blocked by the number of "homesteaders" who remained in place for long periods of time. A third possible research avenue is to examine the impact of a high loss rate of specific categories of highly skilled technicians. There is the perception, for instance, that one of the higher loss rates occurs among "fourth and fifth generation computer equipment experts who are on the cutting edge of scientific technology". The emphasis would be on losses in specific job series and the subsequent impact.

Although there is much anecdotal information pertaining to the problems which stem from turnover or retention of low-performers, there is at this time no systematically-collected data relating to cost-effectiveness nor more general organizational effectiveness. Hard data on replacement and productivity impacts of turnover was perceived as helpful in justifying additional research on retention issues.

Existing Knowledge

A considerable amount of theoretical work has been developed with regard to employee turnover. McGonigal (1977) attempted to provide reliable baseline data on civilian workforce attrition levels throughout the DoD. He was able to link the reasons for leaving to selected predictive characteristics. Curry (1974), in an attitude survey of Navy civilians, used factor analysis and regression equations as a basis for developing a theory to predict employee turnover.

Turnover and attrition rates for the Federal civilian workforce are documented in OPM's Monthly Release: Federal Civilian Workforce Statistics. The Office of the Secretary of Defense publishes Selected Manpower Statistics annually which also contains manpower data on the civilian workforce.

Key references in the non-governmental literature include Steers and Porter (1979), highly regarded for their work and motivation study, and Mobley et al. (1979) who reviewed the turnover research literature, and posited a model for future testing.

In addition, academic institutions have examined the issue of employee turnover. Oregon University's Eugene Graduate School of Management and Business has published a dozen reports (1978-81) discussing employee commitment to organizations. Theoretical analyses of employee turnover have also been undertaken by Texas A & M (1982), Houston (1980) and South Carolina (1977). Studies done at Purdue (1984) and Texas A & M (1983) focus on social adjustment of employees.

The literature did not identify much research on the impact of turnover rates on the organization. Flamholtz (1983) did study the cost impact of turnover for scientists and engineers in Naval Materiel Laboratories.

The Family Member Employment Assistance Program is relevant to turnover rates, particularly overseas. However, it is a recent innovation, and the literature search did not identify any studies concerning its impact on turnover rates. HQDA, ODCSPER (1985) has investigated how extensively the program has been implemented.

PHASE II. ANALYZE RETENTION AND SEPARATION ISSUES

A. Assess Retention Factors

Background

Study participants expressed the need to look at a large number of different elements which potentially play a decisive part in DA civilian employee decisions to stay in or leave the workforce. The assumption is that while financial benefits are of key importance, there are non-compensation factors that may be of similar or greater magnitude. There is also a recognition that key elements may vary widely, based upon age, specific occupation, geographical location, etc.

Specific factors mentioned during the interviews included:

- compensation and benefits

- recognition for outstanding achievement of either a monetary or non-monetary nature

- physical work environment

- work group relationships

- family satisfaction

- organizational culture

- relocation requirements.

A number of these same elements also appear when look-
ing at recruitment, based on the assumption that there is a
good deal of overlap between what influences decisions not
only to begin an Army civilian career but to remain in that
workforce as well.

Comparative wages and benefits with private industry
were suggested as important factors to consider in those
occupations which are in demand not only by the Army, but by
the marketplace in general at this point in time. Also
within the compensation and benefits area, one factor fre-
quently discussed in interviews was that of retirement. It
was noted that the Army has had a steadily growing loss rate
of higher grade individuals since 1979. A raise in retire-
ment age and/or a change in pension benefits could poten-
tially result in an even higher loss rate. In fact the
uncertainty surrounding these possible changes may in and of
itself stimulate increased retirement of experienced person-
nel. One research suggestion was to predict the impact of
prospective changes in retirement regulations on the Army
workforce given its present demographics.

A need for "recognition" was thought by some interview-
ees to be a possible key factor in retention. At least
partly because active-duty Army personnel do have a highly
structured recognition system (e.g., ribbons, medals, etc.),
civilian personnel may "always feel like second class citi-
zens". The civilian system does include cash awards, but
fewer non-financial symbols of achievement than the mili-
tary. This issue is discussed from a slightly different
perspective in the research array on military-civilian rela-
tionships.

Some study participants wanted to know if there was a
correlation between the decision to leave and the physical
work conditions: light, space, heat, privacy, and anti-
quated surroundings. Others suggested looking at work rela-

tionships and family relationships as possible factors, particularly with regard to relocation requirements or rotational assignments.

A second research cluster, along with the identification of reasons key personnel stay or leave, was to identify the characteristics of competing employers in private industry or government. What does the competition offer, in terms of benefits, recognition, work environment, etc., that is attractive to individuals trained within and considered valuable to the Army? What are the future trends in these areas? One research suggestion, specific to an overseas context, was to examine the benefit structure of the State Department, in terms of educational benefits for children, housing and medical policies, etc., for their personnel overseas. Another individual suggested analyzing the work environment and organizational culture created by the National Institutes of Health as a possible model, at least in terms of retention and job satisfaction within the Federal system, based on his personal impression that NIH both attracted and retained high quality and motivated individuals.

Existing Knowledge

Both the military civil service and the federal government as a whole have extensively researched factors related to retention. HQDA, ODCSPER conducts a biennial survey of its civilian personnel. In 1985 civilian employees considered salary and retirement benefits as the most important job-related issues. Pay and promotion for performance were the major concerns in a general civil service survey conducted by OPM (1984) (See Govt. Exec.). A survey of civilians attached to the Army's VII Corps overseas was conducted by Sterling (1980) on retention-related issues.

Non-monetary issues have been considered as well. McGonigal (1978b) conducted a turnover study which focused on the separation characteristics of DoD GS11-18 employees. Attrition due to alcoholism was included in a study of Air Force civilians by Manley et al. (1979).

However, the major focus on retention factors has been with regard to compensation. Compensation is the major variable in models developed by Systems Research and Appli-

cations (1985) to show propensity of employees to quit federal service. The GAO (1981g) examined compensation issues relaced to the federal civilian workforce in view of the philosophy behind the Civil Service Reform Act of 1978. Coursen (1979) studied the composition of the DoD's blue-collar workforce with emphasis on the pay determination system as well as manpower costs. The GAO (1979c) judged as unfounded complaints that the wages for federal blue-collar employees violated the law, but still recommended legislative and administrative reforms for the compensation system. Compensation is considered in the Baker (1977) study of comparative research with regard to the integrated military-civilian service workplace.

McGonigal (1978a) compared the relative pay within DoD to the private sector for selected occupations. Powers (1975) reported on the productivity and compensation of civilians in the DoD's support structure and examined in detail attempts to ensure that wages were comparable to those in the private sector.

Top level management, scientists, and engineers have received much attention in the research related to retention and attrition. GAO (1980d) reported on the detrimental effects of the continued compression of federal executive pay. Andronicos (1981) outlined problems as a result of the attrition of DoD civilian executives caused by the pay cap.

The GAO (1984d) reported that the government is losing some of its top-rated scientists and engineers because of restrictions on their pay. The focus of the study was the government's "special rate" program enabling workers to be paid more than the civil service pay scale for their grade level. Another GAO (1984b) report disclosed more fully the factors related to attrition of scientists and engineers.

Retention was also one of the subjects addressed for the Under Secretary of Defense for Research and Engineering (1982) in a study of scientists and engineers in DoD laboratories. The Joint Panel on Civilian Personnel Management (1981) study of civilian engineers concluded that while their work environment had many favorable aspects, low salary and limited education and career opportunities were matters of much concern to the engineers. NPRDC (1984) also

studied its civilian engineers and concluded that the best predictors of turnover intentions were perceived quality of supervision and overall level of material reward.

Other than compensation, no information was identified in this review on other retention factors nor on characteristics of competing employers in regard to other factors.

B. Assess Separation Issues

Background

Many individuals interviewed indicated that they had concerns about the process involved in dismissing an unsatisfactory employee. The majority of those who discussed the issue of involuntary separation indicated a high level of frustration: "The authority to fire quickly is the number one asset of a manager. In our system it usually takes three to four years and starts with the assumption that the supervisor is wrong."

From a managerial perspective, there was a need to document the financial and organizational costs of the present procedures in order to make a case to streamline those procedures. Managers spoke of the time involved, the problems of morale throughout their organizations when grievances dragged on, the need for voluminous documentation, and the concern that the separation process forced them to be overly-critical of the employee in order to justify the firing, to "over-document the negative". A number of managers indicated that, having gone through the process once with a subordinate, they preferred to find other avenues to deal with incompetent employees, e.g., encouraging a transfer or simply ignoring the situation. Several interviewees suggested the need for research to identify current barriers to termination of ineffective employees as a precursor to efforts to develop appropriate alternative procedures or improve current processes.

Existing Knowledge

The Civilian Personnel Management System Of Forecast (CIVFORS) (1986) includes the capability to project the number of involuntary separations, based on available data. Although no studies on the separation process and its organ-

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izational impact were identified in this review, CIVFORS provides a potential tool for future research and policy analysis in this area.

PHASE III. IDENTIFY RETENTION AND SEPARATION STRATEGIES

A. Develop Compensation/Job Conditions Options

Participants identified two specific research areas related to developing enhanced compensation and job conditions to increase retention:

1. Develop alternative simplified classification systems and compensation/promotion structure

2. Assess overseas incentives offered by private industry, other government agencies.

Background

Study participants expressed a need to increase the flexibility of managerial discretion in many areas, but most particularly in the areas of compensation and promotion within their organizations.

There was interest expressed in the demonstration projects established by the Navy at China Lake and elsewhere, and similar proposals were being submitted for OPM approval by Army organizations such as the Harry Diamond laboratories at the time these interviews took place. It was felt that there was a need to develop demonstration projects in Army organizations other than research and development facilities so as to broaden the base of the types of organizational structures involved in such experiments.

Particular to overseas situations, research might document the types of benefits to be found within other governmental agencies, such as the Department of Agriculture or the State Department and assess the possibility of extending similar benefits to Army civilian personnel. Similar research would look at the benefits offered the employees of large multi-national organizations (World Bank, G.E.) to assess possible transferability.

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RETENTION ARRAY (continued)

Existing Knowledge

Many strategies have been devised to increase retention. The most recent and highly publicized approach is the flexible pay and classification system developed in the China Lake Demonstration Project (See OPM 1984-6). The Army is participating in the Secretary of Defense's Experimental Civilian Personnel Office Demonstration Project (EXPO), which is addressing impediments to staffing and development at 11 demonstration sites. NPRDC is currently developing an evaluation design for the demonstrations.

An HQDA, ODCSPER (1983) study showed that the special salary rate program has been widely used in the engineering and medical fields where OPM has approved rates for broad occupational groupings. Frisch (1984) has suggested that adding a GP (government professional) pay classification will also assist in retention of engineers.

Promotional policies have received considerable attention. Pyle (1979) evaluated the impact of personnel policies on mid-career changes of mid-level Army civilian personnel. OPM (1983c) reported on a computer-assisted evaluation and referral system developed for the Army's centralized promotion program. The GAO (1980b) examined the advantages of the Automated Career Management System, a computer-based personnel inventory, appraisal, and referral system and recommended improvements to obtain greater effectiveness.

Albanese et al. (1977) described the application of a promotion policy model in two Navy laboratories. Creighton et al. (1973) reported on the design of personnel development and evaluation systems as a Navy demonstration project.

OPM (1979a) identified major areas of concern for upward mobility program planning. Gilbert and Sauter (1979) reported on the Federal Executive Institute's Executive Development program. OPM (1976b) presented an overview of the Federal Executive Development Program's assessment center. Hall (1976) reported on an upward mobility assessment center developed by the Civil Service Commission for selecting lower grade employees for job advancement.

Gilliam et al. (1980) examined, in particular, objectives and supporting strategies for management of the Federal blue-collar workforce.

Finally, flex-time strategies are now widely used and have been extensively evaluated as noted in the testing/evaluation section.

B. Develop Separation Options

Three research areas related to developing alternative separation options were identified:

1. Assess feasibility of simplified separation processes;

2. Determine transferability of military and private sector "up or out" practices; and

3. Analyze costs of alternative approaches to reductions in force.

Background

Although interviewees were acutely aware that there are a number of regulations based on law which mitigate against arbitrary or unfair separation from the Federal service, there was still an expressed need to assess ways of simplifying the process and shortening the average time taken up on both the part of the manager and of the employee. Models suggested by several "green-suiters" included those of the military and some private employers where, if promotions are not obtained by a specified time in the course of a career, the individual is separated from the service. One suggestion was to allow every manager "one free fire" every five years, and document the impact on the rest of the organization.

One interviewee also suggested that alternatives to the current "RIF" process be examined, both to reduce the need for lay-offs and to increase the government's capability to retain its best performers when reaching goals for a reduced workforce.

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Existing Knowledge

The literature search did not identify any studies on separation options.

PHASE IV. TEST AND EVALUATE RETENTION AND SEPARATION STRATEGIES

As a logical extension of the proposed Phase III research, two categories of Phase IV R&D were identified:

1. Test selected compensation and job conditions strategies; and

2. Test alternative separation procedures

Background

One avenue for testing new compensation strategies is being explored by various Army organizations that have applied to OPM for permission to develop model demonstration projects. Particularly outside the scientific and engineering laboratory communities, there are at this point very few OPM-approved projects. Several participants expressed a need for more information on the results of the evaluation of the Navy's demonstration projects, as well as a need for experimentation and evaluation within the Army. As noted earlier, the Army is participating in the Secretary of Defense Experimental Civilian Personnel Office research effort.

Various job condition strategies -- such as changes in the recognition system or upgraded work conditions -- could be tested and evaluated via the Model Installation Program.

Existing Knowledge

Testing and evaluation of compensation and job conditions strategies have been undertaken. The most extensive studies have been done on the China Lake Demonstration project. Between 1984 and 1986 OPM examined eight different

aspects of the flexible pay and classification system, including examining the effects of performance-based pay on employee attitudes.

In addition, an evaluation of the standard federal comparability pay setting process by OPM (1984) found it to be ineffective. It recommended that salaries be related more closely to local conditions and found that higher grade employees were being penalized for their success as a result of the present system.

On the other hand, the GAO (1985d) evaluated proposals to limit the Senior Executive Service to only topmost executives and to remove both non-career appointees, as well as scientists and engineers. It reported that there was insufficient data on which to base a recommendation for these changes.

As noted earlier, flex-time strategies have received considerable attention. The OPM (1982a) report on alternative work schedule experiments suggested that some versions of flex-time help cut the attrition rate. Both GAO (1980a) and GAO (1985a) have shown alternative work schedules to be highly successful.

Finally, the Air Force (1983) evaluated its quality circle programs with regard to their effect on job satisfaction and intention to quit or remain and found no significant effect.

The literature search did not identify any studies which tested alternative separation procedures.

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PERSONNEL DEVELOPMENT

OVERVIEW

In the course of policy level interviews and meetings
of the Study Advisory Group it became clear that the objec-
tive having to do with developing the knowledge, skills and
abilities (KSA's) of the civilian workforce was seen as
inextricably linked with both the goals of maintaining a
qualified workforce and the goal of maximizing the produc-
tivity of the workforce. Many of the ideas subsequently
suggested in the research level interviews involve the issue
of structured training and career paths, the need to develop
managerial skills (seen as contributing to a higher level of
productivity) and the need to tie training more closely to
career advancement.

The research areas related to the Personnel Development
objective are depicted in the research array on the next
page.

PHASE I: ESTABLISH BASELINE MEASURES

Specific research questions in the baseline area are:

1. Develop linked measures for individual and organi-
   zational productivity;

2. Assess the current level and patterns of mobility.

Although there is an assumption that individual produc-
tivity contributes directly to organizational productivity,
the nature of the relationship between the two variables has
yet to be clearly established. Hence, basic research was
suggested in order to develop linked measures of both indi-
vidual and organizational level productivity. The issue of
measuring individual productivity is of much concern.
Civilian personnel within the Army are responsible for a
wide range of tasks. Few standards for ascertaining optimum
levels of productivity for individual tasks have been estab-
lished, although there have been extensive job analyses in
some occupational series. Successful development of appro-
priate measures of productivity at both the individual and

PERSONNEL DEVELOPMENT RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES

1. Develop linked measures for individual & organizational productivity

2. Assess current level and patterns of mobility

II. ANALYZE PERSONNEL DEVELOPMENT ISSUES

A. Assess KSA issues
1. Identify KSA's needed at each increasing level of management
2. Identify characteristics of effective supervisors/managers
3. Identify KSA's needed for contractor management
4. Identify leadership skill needs at upper levels
5. Analyze current use of training/professional development funds

B. Assess career development issues
1. Assess factors/career paths of successful supervisors/managers
2. Analyze impact of mobility on promotion and effectiveness
3. Analyze adaptation to mobility
4. Assess meaningfulness of performance appraisal system

III. DEVELOP STRATEGIES TO ENHANCE PERSONNEL DEVELOPMENT

A. Develop strategies to increase KSA's
1. Determine optimum content for supervisor/manager/leader training
2. Assess cost-effectiveness of merging selected military & civilian training
3. Identify cost effective delivery methods for supervisor training
4. Determine optimum content for contractor management training

B. Develop career pathing strategies
1. Develop techniques to measure potential for future performance
2. Assess military and industry models for developing & selecting managers
3. Develop model career paths for supervisors/managers
4. Develop model selection criteria for managers
5. Design optimum mobility/rotation plans
6. Design model succession planning systems
7. Design career path options for secretarial personnel

IV. TEST/EVALUATE PERSONNEL DEVELOPMENT STRATEGIES

A. Test/evaluate training
1. Evaluate cost-effectiveness of current training programs
2. Test new approaches to training developed for Phase III

B. Test/evaluate career development programs
1. Evaluate ACTEDS implementation & impact
2. Test model career development approaches
3. Evaluate effectiveness of current selection processes
4. Evaluate merit promotion system
5. Test model succession planning systems

organizational levels is necessary to the development of standards as well as to the measurement of the effectiveness of training ar.d other productivity improvement efforts.

Another potential area of concern with implications for baseline research is the relationship between job or geographical mobility and productivity. For example, the question arose as to whether or not rotation of personnelists from the field to Headquarters and vice versa would result in higher productivity on both sides. Although there are different skills needed in implementing as opposed to creating policy, it might be that such breadth of experience would lead to greater understanding of system needs and hence individual effectiveness. Baseline research required at this level is simply to ascertain the level and patterns of mobility throughout the Army civilian personnel arena so that the nature of this phenomena can be assessed and related to productivity.

Existing Knowledge

The University of Southern California 1982 and Ghropade and Atchinson (1980) conducted studies which addressed the relationship between individual and organizational productivity. Individual motivation and productivity has been the focus of conferences sponsored by the Office of Naval Research (King, 1983) and one jointly conducted by the Navy Civilian Personnel Center and NPRDC (Broedling and Penn, 1978). These are discussed in more detail within the Motivational Research Array.

The HQDA, ODCSPER (1982) conducted a survey which assessed the current level of patterns of mobility among Army civilians. Survey results showed that fewer than one-fourth of participants said that mobility was encouraged or expected for career advancement.

PHASE II: ANALYZE PERSONNEL DEVELOPMENT ISSUES

A. Assess Knowledge, Skills and Abilities (KSA) Issues

Background

The underlying questions in this research cluster had to do with identifying requisite KSA's at each level of supervisory responsibility, ascertaining those KSA's which characterized individuals who were perceived as being effective supervisors and managers, and looking at the present use of funds expended in training.

Although interviewees expressed interest in a number of management levels within the personnel system, there was a predominant interest in building developmental skills for first line supervisors who are in transition from a focus on technical proficiency to a demand for managerial competence. There was a concern that many of the management courses used to train former technicians emphasized a mastery of rules, e.g., "how to fire people". What was perceived as needed in such courses was the development of skills in such areas as: interpersonal relationships, the presentation of formal briefings, delegation of responsibility, and the conduct of internal review and analysis. Needed skills must be identified and validated before they can be taught, and there are no agreed-upon KSA's for different management levels.

One suggested approach to identifying such capabilities was to ascertain, within specific Army organizations, both the KSA's and individual characteristics possessed by individuals who were considered by both their peers and subordinates to be exemplary supervisors or managers in an Army-specific rather than general context.

It was also suggested that specific KSA's needed to be identified for the task of contract management, given that a higher level of "contracting-out" activities demand an increased need for skilled individuals to supervise contractors. Current contract management courses were perceived as being too limited, concentrating on a knowledge of regulations, without enabling individuals to acquire the wider range of needed skills for this type of management. An example presented was in the area of contracted out nutritional services, where you can't have "contracted chefs who

do their own thing", and need management that goes beyond simply assuring that meals meet nutritional standards. In addition, interviewees felt that there was a need to develop or refine skills such as negotiation, contract monitoring and general supervision of contracts.

For upper levels of management, research was needed to ascertain the leadership skills which civilians should acquire, particularly at a GM 14 and 15 level. One suggestion was that a model analagous to the Federal Executive Institute be created for individuals below the SES level to train them in those identified leaderships skills in an environment removed from the job site.

A related issue was the need to systematically identify how funds were being spent in the area of professional development and training so that a determination could be made on the return on investment for the Army as an organization.

Existing Knowledge

Task-based job analyses of knowledge, skills, and abilities are central to the computer-assisted evaluation and referral system used in the Army's centralized promotion program. In this program, which OPM (1983c) helped develop, these job analyses identify qualifications required for positions in civilian personnel administration. Both Ghropade and Atchinson (1980) and David (1978) examined the use of job analysis. David, in particular, reported on its use in the development of an integrated military-civilian occupational stratification system within the Department of Defense.

In addition, this literature review identified numerous studies which focused on managerial qualifications. Lau et al. (1980) studied the content of managerial work in the public sector in order to develop more effective selection, development, and appraisal programs. Earlier, the U.S. Civil Service Commission (1974a) reported on the need for a systematic plan for identifying managerial potential. While the particular requirements of the plan would differ from agency to agency, the report stress the need for multiple measures in the screening of large numbers of candidates.

PERSONNEL DEVELOPMENT ARRAY (continued)

Currently, the Army is conducting three studies which focus on the professional development of first-line supervisors. First, its Civilian Personnel Center's Atlanta Field Office is examining current practices and how they might be improved. Second, the Army Research Institute has a study under contract to develop improved criteria for the selection of these individuals. Finally, the CIVPERCEN is identifying ideal personal characteristics and traits which make individuals exceptional first-line supervisors.

Civilian managers attached to the military have also received considerable attention, Kelley (1984), using the attributes discussed in the widely read Peters and Waterman book, In Search of Excellence, looked at characteristics of successful program managers in DoD. Chang et al. (1983), in a survey of 1600 Navy civilian managers, distinguished the performance of "exemplary" managers. The previous year, Lau et al. (1982) surveyed both high-level private sector managers and the equivalent level (GS 16-18) Navy civilian executives. From the results, the authors were able to identify job characteristics and perceptions of the skills required for performing effectively. Prior to this survey, Lau et al. (1979) had identified training needs as well as skills and activities of a group of Navy civilian executives. In addition, Broedling et al. (1977) had taken an inventory of management techniques based on a sample survey of Navy civilian and military managers.

The HQDA ODCSPER (1985) considered the particular skills needed by civilian personnel management to supervise contracting and acquisition functions effectively. In an older study, Katzell and Barrett (1966) identified selection factors for first-line Army civilian supervisors.

The HQDA ODCSPER has also made thorough reviews of the apprentice program (1984) and the civilian career intern program (1980). GAO (1979c) had criticized civilian career programs with the DoD as hindering the development of expertise in manpower and personnel management.

B. Assess Career Development Issues

Background

There was a general concern, expressed in interviews with both civilian and military personnel, that the civilian personnel workforce as a whole lacked clear-cut and structured career paths or ladders. Although the Army has a number of career programs, they are targeted to specific grades and occupational series. By contrast, the military was described as appearing to have a series of overall well-defined paths so that an individual with specific career goals can make informed choices about his or her own professional development, and can predict the type and amount of training needed to reach those career goals. Interviews contained research ideas which fell into four different clusters:

- Assess initial factors and career paths chosen by successful supervisors and managers;

- Analyze the impact of mobility on promotion and effectiveness;

- Analyze adaptation to mobility; and

- Assess functions of performance appraisal system.

The suggestion was made that one way to begin to construct possible career paths was to describe and analyze the ways in which high-ranking and successful Army civilian supervisors and managers had arrived at their positions. Patterns of career pathing that emerged from such an analysis might provide a base for constructing models for younger employees. The studies that ARI is now conducting on first-line supervisors will consider this issue.

A second research concept involved describing the actual results that individual job rotation and mobility has on subsequent promotion and on the effectiveness of the individual. This need was identified by both high level managers and lower-grade employees. Some managers perceived a need for greater rotation to enhance leadership potential. Some employees were more skeptical of the "pay-offs" of

rotation and mobility, indicating that they are encouraged to attain a breadth of experience which may or may not be necessary for career goals.

A related concern is to find out how well individuals actually accommodate to mobility by selecting a sample of individuals who have experienced frequent job and geographical changes and look at their adjustment. The findings could then be fed back to the less mobile workforce. Such a study would be part of an examination of the larger question of how individuals can accommodate a career system that may demand a degree of mobility, and successfully balance personal and organizational needs. It may be that there are "natural" times in the individual and family life cycle when employees are more able and more willing to relocate, such as when a youngest child has left home (as opposed to a child's last year in high school). Not only would such a study potentially be of interest to employees in thinking about their own career paths, it might also prove useful to career program managers responsible for planning career paths.

A general concern about the performance appraisal system was raised by a large number of study participants. Most of them were responding to the appraisal system in place in the winter of 1985-6, rather than the shortened form now available. One research suggestion was to look at how performance appraisals could be more effectively used, not simply as a measure of past performance, but as a "measure of potential for the future", and as a way of guiding and structuring future career plans for individuals.

Existing Knowledge

Career development issues have been examined from several perspectives. HQDA, ODCSPER (1984) reviewed career counseling within the Army to determine how effectively activity career program personnel were carrying out their responsibilities. OPM (1979b) focused on major factors in career development. It considered workforce patterns and needs, target positions, selection of program participants, training, counseling, and evaluations.

The impact of performance appraisals or evaluations has been extensively reviewed. Steinberg and Burke (1986) for the Army Research Institute have recently examined the system and concluded that for performance appraisal to be an effective instrument, it must be integral to the work process and organizational goals and in addition, it must receive support from staff supervisors. Both OPM (1985a) and GAO (1983b) have also assessed the effectiveness of performance appraisals. Morrisey (1983) has suggested that well-constructed appraisals can be a useful component of effective supervision. Earlier, Githens and Elster (1978) considered the implications of alternative systems for performance evaluation in analyzing the systems for promotion of Navy officers and civilian employees.

Finally, the GAO (1984b) made a separate assessment of the federal government's senior executive service and concluded that the system contained several weaknesses.

PHASE III: DEVELOP STRATEGIES TO ENHANCE PERSONNEL DEVELOPMENT

Background

Following from the various research issues identified in Phase II of personnel development, strategies to increase or enhance individual personnel development would include:

- Determination of optimum content for supervisor/manager/leader training;

- Determination of training needed for contract negotiation and monitoring.

- Assessment of the cost-effectiveness of merging selected aspects of military and civilian training; and

- Identification of cost-effective delivery methods for training, especially at the supervisor/manager level.

PERSONNEL DEVELOPMENT ARRAY (continued)

Phase II research will address the question, "Who are effective middle and upper level managers and how did they get that way?", as well as identify skills and abilities associated with effective managers in the Army context. A next step would be to devise training and developmental opportunities which would help ensure the acquisition of such KSA's. Similarly, contract management training strategies are needed based on the KSA's and performance deficiencies identified in Phase II.

Because a number of individuals perceived the military's education and training system as being useful for civilians in many areas, a few interviewees suggested exploring the feasibility of converging selected civilian and military training programs. An example given was the need for Department of the Army civilian instructors to be trained by an already-established military system; in those situations in which the same skill progression is needed for both military and civilians, it would be useful to look at the cost-effectiveness of merging what are now different training paths. A similar suggestion was made that the "charm school" offered by the Army's protocol office and now attended by general officers would be extremely useful for new SES'ers as well.

Training methods used by civilians are now very heterogeneous. One study participant commented that "A supermarket approach is still used for the most part in civilian training. Managers select off-the-shelf courses which look good". Therefore it was suggested that a study be conducted to establish the most cost-effective methods of delivering training, particularly when large numbers of trainees from different sites are affected (e.g., supervisory training). Trade-offs involved in using video, off-site training, or correspondence courses in place of or in addition to the methods now used would be analyzed. Such a study would include an analysis of the training methods used in private industry.

Existing Knowledge

A variety of projects have been undertaken by the Army to increase knowledge, skills, and abilities of its managers of civilian personnel. First, the Army Management Engineering Training Activity (1985) has developed a training pro-

gram to meet the identified competency needs of its managers. The program is the Army Civilian Executive and Manager Development System (ACE-MDS). Second, the Human Resources Research Organization (HumRRO) is working on a project for the Army which will identify the KSA's necessary to succeed in the senior grades within the logistics management field. The project is designed to support the Army Civilian Training, Education, and Development System (ACTEDS). Third, as noted earlier, the Army is conducting a series of studies designed to improve first-line supervision. Finally, Dolezal (1984), at the Army War College, examined military leadership development, then compared military to civilian leadership, and proposed a strategy for improving the development of civilian managers.

An in-depth study of the Department of Defense was conducted by HumRRO (1976) to compare military and civilian training. Finally, Creighton et al. (1973) discussed a Navy demonstration project on the design of a personnel development and evaluation system.

The literature search identified a study with strategies to improve the contracting out function. HQDA, ODCSPER (1985) reviewed civilian personnel managerial and supervisory effectiveness in both the contracting out and acquisition functions. The report identified areas in which improvement was needed and suggested strategies to improve the effectiveness of these functions.

B. Develop Career Pathing Strategies

Background

In order to overcome the perception that civilian personnel career paths are "do it yourself" projects, and that professional development is largely "catch and catch can", and "totally haphazard -- hit or miss" there were a number of research possibilities which would contribute to a more well-defined and structured pattern of advancement. Such strategies would include:

- Developing techniques to measure supervisory/managerial potential for future performance, and examining criteria used by other organizations such as the Center for Creative Leadership;

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- Assessing both military and industry models current-
  ly in use for developing and selecting managers;

- Developing model career paths for supervision and
  management positions which might include required
  assignments;

- Developing model selection criteria for managers, as
  opposed to randomly selecting individuals who "pop
  into or ooze into" supervisory positions from tech-
  nical backgrounds;

- Designing mobility and rotation plans with clear
  pay-offs for employees;

- Designing model succession planning systems using
  software systems; and

- Designing career path options for lower grade secre-
  taries, stenographers and clerk-typists who are
  frustrated at the possibility of spending their
  entire careers as GS-6's based on the nature of the
  job standards and descriptions.

Existing Knowledge

HQDA, ODCSPER has recently implemented a program to
improve the training of its civilian workforce. The Army
Civilian Training, Education, and Development System
(ACTEDS) will identify potential managers who will receive
training to strengthen their experience and knowledge (See
Sumser 1984, 1985).

The literature search also identified studies done of
other career development programs. Lancaster and Berne
(1981) reported on employer-sponsored career development
programs. Gilbert and Sauter (1979) discussed the Federal
Executive Institute's executive development programs and OPM
(1979) presented an overview of the Federal Executive Devel-
opment Program assessment center.

PHASE IV: TEST/EVALUATE PERSONNEL DEVELOPMENT STRATEGIES

Background

A number of evaluation activities were mentioned by study participants, while others are logical follow-ons to strategies suggested in Phase III.

A. Test and Evaluate Training to Increase Personnel Development

It was pointed out to interviewers that it was extremely difficult for Army personnel to delineate what, if any, effects training has on the productivity level or skills acquisition of employees. Except in cases where, at least perceptually, the Army trains them and "they leave to go work for IBM", it is difficult to show the impact of training on participants who remain within the Army. Therefore, any new training strategies developed should be evaluated in terms of cost-effectiveness, both to the individual participating and to the organization to which they return with new KSA's.

Existing Knowledge

The HQDA, Program Evaluation Directorate maintains an ongoing review of training programs within the Army. For example, Crum (1981) examined retention rates as a result of the intern development program.

B. Test and Evaluate Career Development Programs

Background

Several participants mentioned a need to evaluate the implementation and impact of the new Army Civilian Training and Educational Development System (ACTEDS). In particular, the emphasis placed on mobility, both geographical and occupational, is perceived to be causing concern. Individuals who are unable or reluctant to enter into mobility agreements are concerned that promotions will be based solely on mobility. ACTEDS thus provides an arena in which to evaluate the benefit of mandatory movement to the Army.

Other possible testing and evaluation projects would include:

- Test model career development approaches;

- Evaluate effectiveness of current selection processes;

- Evaluate the merit promotion system in terms of its acceptability to civilian personnel; and

- Test model succession planning systems once they are developed.

Existing Knowledge

HQDA, ODCSPER (1983) evaluated its Senior Executive Service Candidate Development Program. It found supervisors were generally satisfied. The literature did not identify other evaluations of career development programs.

ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY

OVERVIEW

The majority of study participants occupied positions outside the personnel field, and thus brought a line management perspective to the consideration of research issues. In response to the questions dealing with developing more effective policies and procedures for managing civilian personnel, however, a large number of respondents chose to concentrate on personnel policies and procedures which affect them as managers. It was in this research array that issues of the relationship between CPOs and management were most clearly elucidated. Although there is emphasis on personnel productivity issues reflected in the research areas, the sub-arrays dealing with organizational issues/ strategies and with automation encompass a broad range of potential research areas related to increasing the productivity of the civilian workforce.

The research areas in the research array on organizational productivity are depicted on the next page.

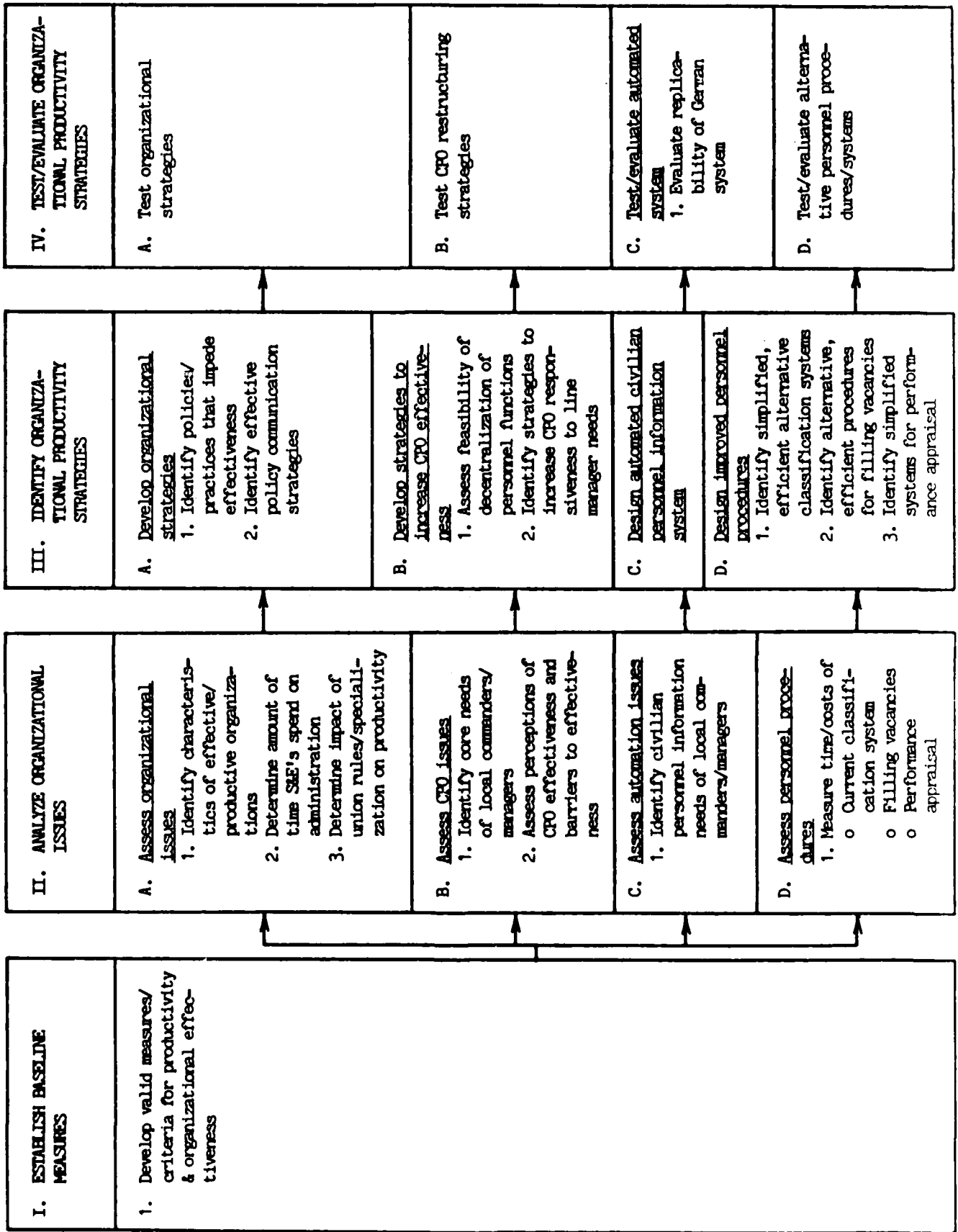## PHASE I: ESTABLISH BASELINE MEASURES

Background

There is one research cluster to be considered under the "baseline" category, and that is to establish valid measures and criteria for measuring productivity from an organizational (rather than individual) perspective. This area is similar to the issue of developing measures of organizational productivity identified in the other productivity-related arrays. A related issue to be addressed is: What are the criteria to be used to determine if an organization is effective?

Existing Knowledge

The Civil Service Reform Act of 1978 identified productivity as a major objective of the Federal government. A systematic campaign to improve productivity within the Federal sector requires the utilization of valid measures to assist in the identification of unsatisfactory performance,

ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES

1. Develop valid measures/criteria for productivity & organizational effectiveness

II. ANALYZE ORGANIZATIONAL ISSUES

A. Assess organizational issues
1. Identify characteristics of effective/productive organizations
2. Determine amount of time S&E's spend on administration
3. Determine impact of union rules/specialization on productivity

B. Assess CPO issues
1. Identify core needs of local commanders/managers
2. Assess perceptions of CPO effectiveness and barriers to effectiveness

C. Assess automation issues
1. Identify civilian personnel information needs of local commanders/managers

D. Assess personnel procedures
1. Measure time/costs of
   o Current classification system
   o Filling vacancies
   o Performance appraisal

III. IDENTIFY ORGANIZATIONAL PRODUCTIVITY STRATEGIES

A. Develop organizational strategies
1. Identify policies/practices that impede effectiveness
2. Identify effective policy communication strategies

B. Develop strategies to increase CPO effectiveness
1. Assess feasibility of decentralization of personnel functions
2. Identify strategies to increase CPO responsiveness to line manager needs

C. Design automated civilian personnel information system

D. Design improved personnel procedures
1. Identify simplified, efficient alternative classification systems
2. Identify alternative, efficient procedures for filling vacancies
3. Identify simplified systems for performance appraisal

IV. TEST/EVALUATE ORGANIZATIONAL PRODUCTIVITY STRATEGIES

A. Test organizational strategies

B. Test CPO restructuring strategies

C. Test/evaluate automated system
1. Evaluate replicability of German system

D. Test/evaluate alternative personnel procedures/systems

the formulation of strategies to boost productivity, and the documentation of successes. Mark (1979) considered such measurement issues for Federal productivity.

OPM has extensively addressed the methodology of constructing measures of Federal productivity in a series of annual summaries and reports, but much work on measurement remains to be done to provide the type of measures needed for most Army civilian organizations. Reporting on the data for FY 1978, OPM (1980c) defined productivity as embracing _efficiency_, _effectiveness_, _quality_, and _responsiveness_.

Aware of the methodological problems involved, OPM (1980c) characterized the current methodology of Federal productivity measurement as "evolving." It identified the conventional approach to productivity measurement as the computation of ratios of input to output. In the Federal sector, input and output values frequently must be assigned by non-market judgments. OPM (1981e) identified problems with the use of input-output ratios to measure aggregate productivity, and OPM (1981d) recommended the establishment of input-output based on careful definitions of productivity or performance elements for which measurements are sought.

In their study of the feasibility and meaningfulness of comparing Federal and private sector productivity, Gollub and Hatry (1981), as well, found problems with the input-output measures of aggregate Federal productivity. Because of the problems with aggregate measures, few Federal-private comparisons are available, except at the "disaggregate" level of firm or agency. Such comparisons have been made by the Bureau of Labor Standards, trade and industry associations, academic researchers, and private research firms. The National Center for Productivity and Quality of Working Life (1978) did attempt a broad comparison of productivity differences between the public and private sectors.

As a solution, Gollub and Hatry (1981) proposed the acquisition of data on absolute levels of production, the monitoring of key productivity factors (such as worker education, worker experience, and equipment condition), and the regular comparison of Federal-private productivity for selected activities.

ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

In addition, the Merit System Protection Board (1982) has expressed concern with other aspects of government productivity, including effectiveness (in meeting given objectives), responsiveness (to public demands for services), promptness, courtesy to the public, avoidance of mistakes, and an undefined "quality" of services.

While productivity measures are used throughout the Federal sector to identify problems requiring corrective action, OPM (1980d) found a wide variety of methods for "keeping score" on particular activities. These methods range from simple work measurements to systems for integrating a variety of factors, such as personnel, budget, program performance, and employee performance appraisals.

OPM (1980b) offers a partial solution to this issue. Through a random sampling of work activities that measured time and unit labor associated with these activities, OPM assessed the productivity of operating personnel offices. This produced indices of productivity that were valid at the office level of aggregation and offered a methodology for measuring efficiency in labor time that is transferable to other such administrative services.

OPM (1982b) set a long-range research agenda for measuring productivity with priority given to organizational structure, managerial supervision, applied technology, work motivations, and human resources planning and development.

In addition, the Defense Department employs myriad measures of effectiveness of various elements of its operations for limited purposes, such as enhancing the performance of particular tasks. Since 1965 for example, DIMES (Department of Defense Integrated Management System) has employed expert panels to set performance standards against which to compare actual performance. Limited to particular applications are the Air Force's organizational assessment package discussed by Hendrix and Halverson (1979) and the Air Force's senior executive appraisal system discussed by Guerrieri (1981). Goode (1981) focused on the special application of measuring the productivity of "thinkers" in the Navy.

Performance appraisal has also received considerable attention in professional journals. Hyde and Cascio (1982) edited a Symposium on Performance Appraisal in Public Personnel Administration. This work measurement approach is also discussed in Edwards (1983), Ralph (1980), and Holley (1978).

Such work measurement systems have been subjected to criticism. Reviewing DIMES, the GAO (1976) found weaknesses in the work measurement program and proposed steps for improvements. Thayer (1981) charged that the performance appraisal system established in the wake of the Civil Service Reform Act depends on "impossible and indefensible appraisal."

A DoD (1977) study reflected the concern of the Department of Defense with the standardization of work measurements. The GAO (1981f) report found serious problems with the work measurement program within the DoD and recommended ways for improving the system.

The Air Force Institute of Technology (1978) attempted to develop a model to estimate time required to design a project. However, while a relationship was found between the project design manhours and the independent variables, it was too weak to produce an accurate enough model.

Problems of constructing valid measures persist. One of the impediments to productivity cited at the 1978 conference on "Productivity and Work Motivation in the Navy and the Military Services" was the lack of fully effective ways to measure productivity (Broedling and Penn 1978; Nebecker et al. 1978).

PHASE II: ANALYZE ISSUES AFFECTING ORGANIZATIONAL PRODUCTIVITY

Potential research topics in this area focused on four different topics:

1. General organizational issues;
2. Civilian personnel office issues;
3. Automation issues; and
4. Personnel procedural issues.

Background

A. Assess Organizational Issues

The first need identified was to determine the structural characteristics which generally have been associated with effective organizations in the Army, in government, and in industry. It was suggested that existing programs be evaluated to identify specific characteristics associated with the most effective and productive Army organizations, as well as to pinpoint "disconnects" between policy and procedures which have been established for such organizations, but which in effect hamper their effectiveness.

One specific research suggestion was to study the amount of time spent by scientists and engineers (S&E's) performing administrative tasks, instead of the research activities they are trained to do. Participants speculated that a study might identify significant productivity losses that could be avoided with alternative staffing plans.

Another specific research suggestion was to examine the impact of union rules on productivity. Specifically there was concern about those rules which result in "micro-specialization", so that, for example, on an Army installation, it would take "seventeen trips to fix a shower" for the plumbing, woodworkings, glazing, etc. to be completed. If the impact could be documented, organizational strategies might be developed to alleviate the inefficiency.

B. Assess CPO Issues

There was an expressed interest in doing an overall study which clearly delineates the role of personnelists vis-a-vis management.

As one interviewee expressed it, "personnelists have no sense anymore of what their jobs are; it's real fuzzy." There is a lack of clarity as to whose function it is,

personnel or line management, to do "position management" or "suicide prevention" or "AIDS testing". There is a need therefore to determine what the core functions of a CPO should be, and, conversely, should not be; to determine what commanders and military or civilian managers want from their personnel officers, and which responsibilities are clearly those of management. Until this assessment is done, the resulting lack of clarity prevents CPOs from being perceived to be or actually to be effective organizations. According to another study participant, CPO's have "bad reputations", are not seen as being service-oriented and are perceived as being "strapped by laws that they hide behind". Therefore a systematic study should be done to assess the range of perceptions held about CPOs and identify both the perceived and actual barriers to the effectiveness of those organizations.

C. Assess Automation Issues

An area of concern mentioned frequently in the interviews was automation, and specifically the need for automation within the civilian personnel system. In fact, one of the gravest barriers cited to productivity on the part of CPOs at the present time was the lack of a sophisticated and workable automated system to eradicate what is now viewed as "a shambles" with erroneous and out-of-date data, which is therefore largely useless to any decision-making process.

One critic of the automation systems introduced thus far described automation as too "top down in concept" and driven by ADP specialists, rather than by the individuals who use the systems. A logical research suggestion stemming from this concern was to identify the information needs in the civilian personnel area that would meet needs at "the local level to serve local commanders, managers and CPOs, rather than CPO's only."

D. Assess Personnel Procedures

A number of study participants indicated that many current personnel procedures should be re-examined in terms of their impact on productivity. Specific procedures mentioned, where the associated time and costs should be measured included the:

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ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

- Current classification system;
- Procedures used to fill vacancies; and the
- Performance appraisal system.

The research objective would be to "identify impediments to good personnel management" in these three areas. One participant observed that, in general, the personnel system was "a system which has grown like topsy with little thought given to the impact of thousands of individual rules and regulations. . .a bureaucratic overreaction which attempts to anticipate any possible contingency." As noted previously, these are issues which the Modernization Task Force is currently considering.

Existing Knowledge

The literature search identified two studies which assessed issues related to organizational effectiveness. HQDA, ODCSPER (1975) studied two of AMC's depots in an effort to identify personnel management factors which either improve or reduce productivity.

Two major findings were that the more productive depots had supervisors who were given greater flexibility and authority to make personnel management decisions, and that better communications in both directions existed in these depots.

Labor-management relations were studied by the GAC (1982). The report recommended several ways to reduce the number and costs of unfair labor practice charges. These procedures included informal settlement of disputes, assessment of managerial-labor relations effectiveness, and the monitoring and evaluating of unfair labor practices. This study did not look at the issue of micro-specialization, however.

As indicated earlier, OPM (1980b) did perform an analysis of personnel office productivity and developed productivity indices. The Navy has investigated the potential development of CPO performance standards, and CIVPERCEN has examined various aspects of CPO effectiveness. No studies were identified in this search, however, that explicitly address the relationship between CPO's and line managers as suggested here.

ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

Several studies were located which focused on automation-related issues. In a study investigating the cause of the growth in civilian employment for the Army Deputy Chief of Staff for Logistics (1985), it was determined that significant manpower savings could be realized through automation. Earlier, Headquarters, Department of the Army had requested the accounting firm of Arthur Young (1979-80) to assess information management needs and make recommendations. In addition, better use of information technology was found by the GAO (1982) to reduce the burden of Federal paperwork.

The literature search did not identify quantitative studies about the time and costs of the present classification systems, filling of vacancies, or completion of performance appraisals. However, considerable research has been undertaken with regard to the procedures for classification of federal employees.

OPM (1980d) indicated that senior government officials reported that the classification system posed an arduous paperwork and regulatory burden. Carpenter and Christal (1972) used data from a job analysis to make assessments about the stability and objectivity of the civil service classification system. David (1978) discussed the development of an integrated occupational stratification system to include both military and civilian personnel in a common structure within DoD. Babcock and Meriwether (1981) reported on the (then) new China Lake Demonstration Project. It assessed whether the flexible pay and classification system could help managers increase organizational effectiveness.

Other studies have found a conflict between the application of classification standards and a manager's need to upgrade an individual's classification because pay ceilings are perceived as under-compensating employees. Broedling et al. (1980) discussed this issue in their examination of impediments to productivity at a Navy industrial facility. Hayes et al. (1978) reported on the causes of the general increase in grades of Federal civilian workers.

GAO (1981d) reported on causes and responses to the Department of Defense grade escalation. GAO (1981c) dealt with DoD's management of civilian personnel ceilings. An

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HQDA, ODCSPER (1983) study delineated problems in the administration of high grade controls, position management, performance standards, and mixed grade positions.

Finally, Koslowski (1981) focused on the time taken to fill vacancies and found concern among the Navy's managers and personnel specialists about excessive time taken to fill positions, either through merit promotion or through external hiring under OPM employment registers. In addition, he noted concern about the effect of the Uniform Guidelines on Employee Selection Procedures.

PHASE III: IDENTIFY POTENTIAL STRATEGIES TO INCREASE ORGANIZATIONAL PRODUCTIVITY

Following the format in the preceding section which identified various organizational issues, strategies to increase organizational productivity can be grouped under four headings:

1. Develop organizational strategies;

2. Develop strategies to increase CPO effectiveness;

3. Design automated civilian personnel information system; and

4. Design improved personnel procedures.

A. Develop Organizational Strategies

Background

Strategies under this heading would include identifying specific policies and practices that impede effectiveness in particular organizations. For example, one participant suggested looking at the impact of a supply requisition system which must be standardized to the point where it becomes counter-productive in many local situations. Another example cited was the use of "stopper" lists in personnel hiring, which frequently results, according to managers, in being forced to hire under-qualified and hence less productive employees.

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A second research area suggested was identifying effective strategies to facilitate the communication, from headquarters to the field, of new policies. The specific question asked was "how can we market to the field the need for and reasoning behind policy decisions made at headquarters? Is it possible to do this Army-wide so as to get people on board?" The failure of field activities to understand and/or effectively promulgate policy decisions is seen as an important issue, particularly in the personnel area.

B. Develop Strategies to Increase CPO Effectiveness

Background

One theme raised in a number of different interviews was the need to research the feasibility of moving a number of personnel policy functions from the purview of the Office of Personnel Management to the control of the Department of the Army or the Department of Defense and other individual government agencies. The reasoning behind this line of inquiry was the perception that DoD employees are different in many ways from other civilian employees. An example cited was the Army civilian employee overseas, who unlike his counterparts in other agencies, needs training in small arms, the defense of a base, etc. These differences were the basis for arguing for a higher degree of autonomy in civilian personnel policy and procedures, and for studyies to determine the areas where greater autonomy would be most beneficial and feasible. OPM policies were frequently viewed as a major obstacle to managerial discretion and hence productivity.

A second theme found in the interviews was the need to devise ways to increase the responsiveness of the Civilian Personnel Office to line manager needs and organizational missions. To many managers, personnelists are seen as "too much an entity unto themselves", and not accountable for program results. A study was suggested to ascertain how the personnel system enhances or detracts from mission achievement, and to identify potential avenues to increase CPO responsiveness to line managers.

C. Design an Automated Civilian Personnel Information System Responsive to Management Needs

Background

Although the Army Civilian Personnel System (ACPERS) is planned to go on-line in 1988, managers expressed impatience with the antiquated and outmoded "stubby-pencil" system now in place. A concern expressed was that, in addition to the development now going on, the new system should have features which allowed military and civilian managers to access personnel data needed for their own planning and decision-making processes.

D. Design Improved Personnel Procedures

Background

The key theme identified for improved personnel procedures was simplification, without violation of legal parameters. The Navy Demonstration Project (see Existing Knowledge Statements in Phases III and IV of Motivational Productivity Research Array for bibliographic references) has simplified the classification system as well as performance appraisal procedures, and may have key elements which could be used as a model by Army organizations, both within and outside of the laboratory system. The three areas of focus would be designing alternative classification systems, identifying alternative procedures for filling vacancies, and identifying simplified performance appraisal procedures. Both the Army Modernization Project, which is concerned with model civilian personnel offices, and the OSD Experimental effort are addressing these specific areas.

Existing Knowledge

Various attempts have been made to develop strategies which would increase organizational productivity. The GAO (1980c) found that 57% of federal professional staff said that they spent substantial time on tasks that could be delegated. Consequently, it recommended both that the ratio of support staff to professional staff be increased and that more tasks be automated.

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ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

Several organizations have addressed personnel ceilings as an obstacle to effectiveness. Lacy (1985) reported on the DoD savings obtained in workload scheduling, training, and recruiting through the exemption of industrial fund activities from civilian ceilings. Albanese et al. (1977) described a promotions policy for Navy labs to cope with personnel ceiling restrictions, high grade controls, promotion restrictions, and other such limitations. Broedling et al. (1980) reported that responses to personnel ceilings included the contracting out of work and the hiring of temporary and part-time employees. The HQDA, ODCSPER (1983) examined the usefulness of part-time employees.

CPO effectiveness strategy issues were discussed in the previous existing knowledge section.

Some literature has been identified which considers designs for automated civilian personnel information systems. As noted previously, the Department of Defense has developed an automated career management system which GAO (1980b) evaluated. NPRDC (1983) identified requirements of the personal computer user in order to enhance the ability of the computer design to meet the user's needs. ACPERS is discussed in Sumser (1985).

Improved personnel procedures were addressed in the previous existing knowledge section. An additional reference identified by the literature search is an OPM (1981b) experiment to determine the economy and feasibility of using comprehensive occupational data analysis (CODAP) to develop position classification standards for civilian occupations.

PHASE IV: TEST AND EVALUATE ORGANIZATIONAL PRODUCTIVITY STRATEGIES

Following the four clusters of productivity strategies discussed in Phase III, test and evaluation activities would fall into four areas:

ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

1. Test organizational strategies;

2. Test CPO restructuring strategies;

3. Test and evaluate suggested automation features; and

4. Test and evaluate alternative personnel procedures.

A research suggestion made in the first Roadmap interview was to evaluate the automated system now in place in USAREUR for possible replicability CONUS. In Europe, where the Army's general communication system is considered "Hitler's Revenge", the same computer hardware and software were used throughout the 32 CPO's. The USAREUR system is also able to access information pertinent to labor market availability of different types of jobs within the local economy, a capability not now part of the CONUS system. Because the USAREUR system "is still an infant", it was suggested that this would be an appropriate time to evaluate it and perhaps avoid "reinventing the wheel" in other systems.

Existing Knowledge

The literature search identified two evaluations of organizational productivity strategies. ARINC Research (1984) evaluated the Visibility and Management of Operating and Support Costs Program (VAMOSC). It concluded that greater training of personnel who could benefit from the program was needed to make it effective.

NPRDC (1978) conducted two evaluations of an experimental performance contingent reward system designed to improve productivity. It found that production improved substantially in a 12-month period and in addition, set-up costs were recovered in the first three months of operation.

CPO structure was addressed by van Rijn (1983) in a sociotechnical evaluation of the Corpus Christi Army Depot (Texas) which resulted in twelve recommendations to improve productivity that were approved for implementation. NPRDC's upcoming evaluation of the OSD Experimental Personnel Organization demonstrations will also help to address this research need.

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ORGANIZATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

The literature search did not identify any studies which evaluated the extent to which the system used in Germany could be applied elsewhere.

OPM has conducted limited evaluations of alternative personnel procedures (e.g., Machane, 1979).

MOTIVATIONAL PRODUCTIVITY RESEARCH ARRAY

OVERVIEW

Of the three objectives in the Relevance Tree, the one labeled "Maximize Productivity of Civilian Workforce" received the most attention and elicited the majority of research suggestions. And, although a draft version of the Tree listed the objective "Develop supervisory and non-supervisory personnel" as a part of "Maintain Qualified and Representative Workforce", the members of the Study Advisory Group saw a direct linkage between personnel development and productivity as well. The productivity objective, therefore, has three separate contributing research arrays: personnel development, organizational productivity (based on policy and procedures), and motivational productivity.

Within the productivity objective, the largest number of research suggestions dealt with establishing the primary factors affecting motivation and the differences in motivational factors for various types of employees.
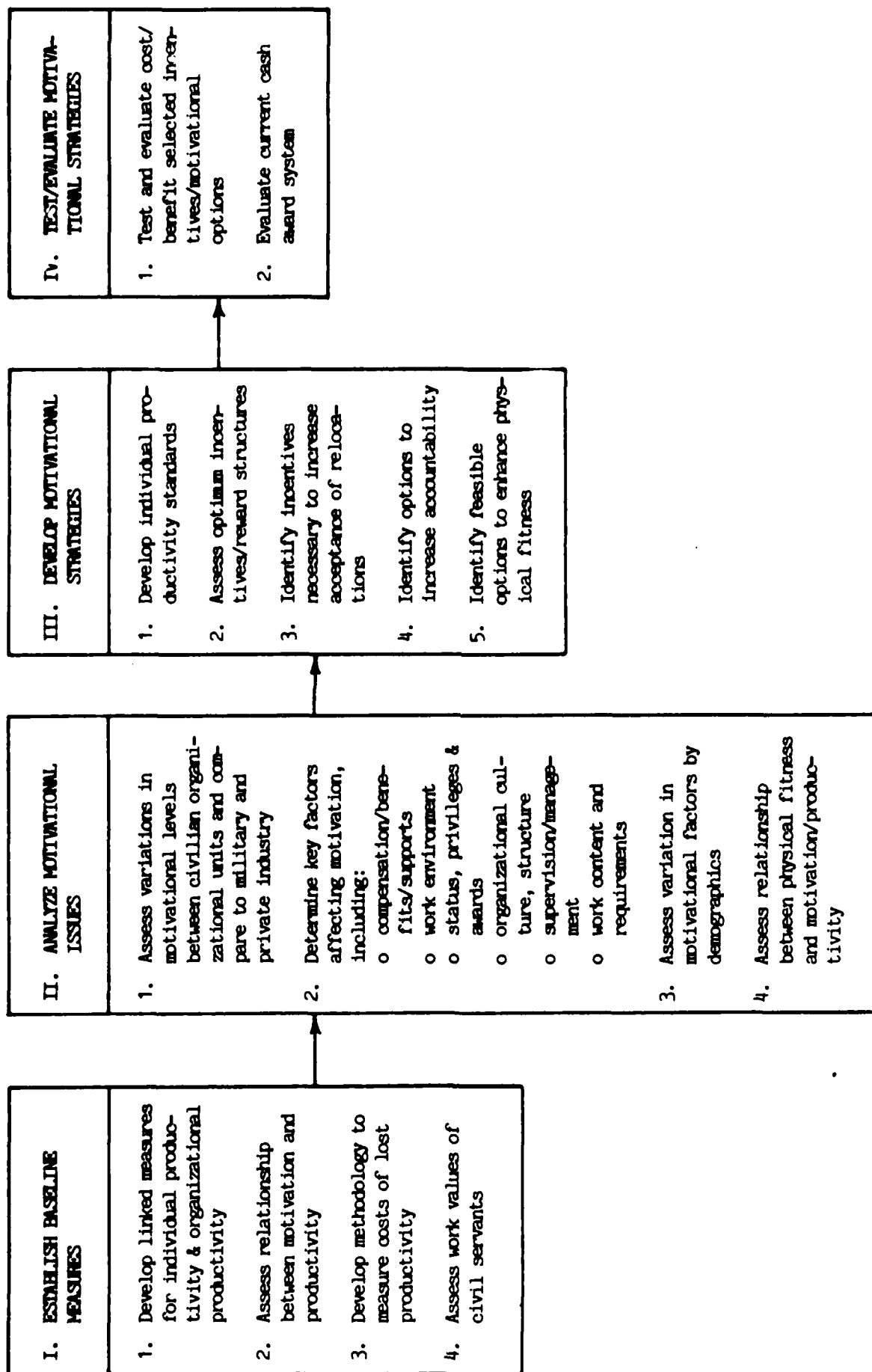
The research areas related to the motivational objective are depicted in the research array on the following page.

PHASE I: ESTABLISH BASELINE MEASURES

There are four research areas which make up the baseline measures phase:

1. Develop linked measures for individual productivity and organizational productivity;

2. Assess the relationship between individual motivation and productivity;

3. Develop a methodology to measure the costs incurred because of lost productivity; and

4. Assess the work values of the Army's civil servants.

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MOTIVATIONAL PRODUCTIVITY RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES

1. Develop linked measures for individual productivity & organizational productivity

2. Assess relationship between motivation and productivity

3. Develop methodology to measure costs of lost productivity

4. Assess work values of civil servants

II. ANALYZE MOTIVATIONAL ISSUES

1. Assess variations in motivational levels between civilian organizational units and compare to military and private industry

2. Determine key factors affecting motivation, including:
   o compensation/benefits/supports
   o work environment
   o status, privileges & awards
   o organizational culture, structure
   o supervision/management
   o work content and requirements

3. Assess variation in motivational factors by demographics

4. Assess relationship between physical fitness and motivation/productivity

III. DEVELOP MOTIVATIONAL STRATEGIES

1. Develop individual productivity standards

2. Assess optimum incentives/reward structures

3. Identify incentives necessary to increase acceptance of relocations

4. Identify options to increase accountability

5. Identify feasible options to enhance physical fitness

IV. TEST/EVALUATE MOTIVATIONAL STRATEGIES

1. Test and evaluate cost/benefit selected incentives/motivational options

2. Evaluate current cash award system

MOTIVATIONAL PRODUCTIVITY RESEARCH ARRAY (continued)

Background

The first three research areas are concerned with developing the measurement tools necessary to conduct motivation and productivity research and justify motivational enhancement strategies. The first research issue is identical to one that appears as part of Phase I in the Personnel Development Research Array: Develop linked measures for individual productivity and organizational productivity. This is a necessary research step because at this time there are a multitude of both Army jobs and Army organizations for which no measures of productivity exist. Not only do measures not exist, but, as one study participant pointed out, potential measures may be mutually contradictory. It could be assumed that "filling jobs in the shortest time" is a possible criteria, therefore, those CPO's and those individuals who are most able to fill vacant positions quickly would be rated "most productive". At the same time, the law requires that certain EEO requirements be met: meeting these would also be considered "productive", although at the same time fulfilling these requirements may add to the time taken to fill the position. Developing valid measures for productivity is an extremely complex project, particularly so for administrative positions.

Another basic research need is to assess the relationship between motivation and productivity. This research would facilitate research in subsequent phases which attempts to determine the individual productivity "pay-offs" of strategies designed to enhance individual motivation. Similarly interviewees were convinced however that until the financial costs of such "lost" productivity could be measured, there would be little impetus to change.

The last research suggestion is concerned with identifying the work values of Army civil servants as they relate to motivation to succeed and meet organizational goals. One hypothesis is that factors which led to high motivation levels in the past may have changed. For example, the generation that began work during the Depression or shortly after, for whom job security might have been a paramount motivational factor, have been largely replaced by generational cohorts with a different work ethic. Recently, there has been much discussion of individuals having to choose between conflicting family and occupational values, with

some opting for the former. The research would examine changing values, their impact on work motivation and career decisions, and the impact on managerial responses to employees.

Existing Knowledge

The literature search identified two studies related to the development of linked measures for individual productivity and organizational productivity. The University of Southern California (1982) showed the relationship of the design of the pay system to motivation and organizational effectiveness. Ghropade and Atchinson (1980) linked the evaluation of an individual's job performance with the ability to improve productivity.

A number of studies have been undertaken which examined the relationship between motivation and productivity. Nebeker and Moy (1977) discussed the theoretical implications of expectancy theory and its effects on work performance. Ilgen et al. (1980a) proposed methods for evaluating the variables related to expectancy theory. Dockstader et al. (1980) presented behavioral principles of incentive management for enhancing productivity. Steers and Porter (1979) provide a review of theories and findings on motivation and work productivity.

Nebeker et al. (1975), in an experimental setting, found that simply providing workers feedback about their work influenced their subsequent performance. Broedling (1974) identified a link between an individual's perception of having control of his own environment and superior performance.

The literature did not identify any studies showing a methodology to measure the costs of lost productivity.

The literature search did not identify any reports which assessed the work values of civil servants, although the Army has made 1986 the Year of Values, and reports on work values may become available later in the year.

PHASE II: ANALYZE MOTIVATIONAL ISSUES

1. **Assess the Variations in Motivational Levels Between Governmental Civilian Organizational Units; Compare to the Military and Private Industry**

Background

Interviewees were interested in identifying organizations and types of organizations where motivational levels are high, so that significant differences could be identified. Interviewees expressed an interest in researching what types of organizational structures tended to motivate the workforce, e.g., were matrix-type structures more conducive to high levels of motivation than line hierarchy structures? Does participative management increase motivation?

Another approach was to look at government organizations, such as the National Institutes of Health, where civilians can achieve the highest positions, unlike Army civilians where the primary leadership positions are held by the military. Do motivation levels differ significantly? How do other government agencies and private industry motivate their employees? Are there exemplary practices that might be used by the Army?

2. **Determine Key Factors Affecting Motivation**

Background

A number of study participants identified particular factors that they wanted to see examined in terms of their impact on motivation. These factors included:

- Compensation/benefits/supports; e.g., the provision of child care systems for civilians as well as the military.

- The work environment; what is the benefit-cost ratio of providing better physical living and working conditions, of creating "quality work space" rather than the "lowest possible standards"; how can the

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return on investment of providing good facilities be demonstrated in terms of higher motivation and productivity.

- Status, privileges and awards, particularly for the Senior Executive Service; how can it establish its own legitimacy and status-award system? What would be the impact of being allowed to fly business class overseas? of having brief case inspection regulations identical to general officers or having distinctive building passes?

- Organizational culture and structure; how does the organizational emphasis on standardization impact motivation, particularly in local situations where standardized rules and regulations are perceived to be counter-productive?

- Supervision/management; what management styles encourage motivation and which do not?

- Work content and requirements; what types of requirements (such as travel regulations) become demotivators? and how do they impact on motivation and productivity?

3. Assess Variation in Motivational Factors by Demographics

Background

To motivate individuals, one must first be understood how different groups of people view their own work and performance over time. For example, what might be different motivating factors for:

- professional women
- members of dual career families
- the older workforce
- different ethnic groups

and how do these possibly different motivational factors affect the Army's occupational system?

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4. Assess Relationship Between Physical Fitness and Motivation/ Productivity

Background

A number of managers, both military and civilian, raised the concern that relatively little was being done to encourage physical fitness in the civilian workforce. There was an expressed need to look at the relationship between physical well-being and both motivation and productivity beyond simply measuring number of days of sick leave.

Existing Knowledge

There has been considerable research on employee motivation in the professional literature, but very few definitive studies on the military civilian workforce. King (1983) reported on a conference on "Productivity Programs and Research in U.S. Government Agencies" which was sponsored by the Office of Naval Research. The relationship between productivity and work motivation was also discussed at a conference jointly sponsored by the Navy Office of Civilian Personnel and the Navy Personnel Research and Development Center (Broedling and Penn 1978). One of the major impediments to increased productivity cited by the conferees was the lack of sufficient means to reward employees for superior performance.

Compensation was also among the issues considered at the OPM (1981f) sponsored Western Forum on Federal Productivity and the Quality of Working Life. Related studies have been done with regard to compensation and motivation. Clark (1983), in an attitudinal study, addressed the issue of the relative lack of incentive programs in government. Nigro (1982) reported on the considerable concern within the civil service about the applicability of performance appraisal to merit pay. Broedling et al. (1980) cited reports that low pay and an unfavorable public image of government employment adversely affected worker attitudes and productivity at a Navy industrial facility. McGonigal (1978a) compared the relative pay for selected occupations within the DoD and the private sector.

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Managerial styles also have an impact on worker motivation. Gabris and Giles (1980) discuss the link between perception of managerial style and employee performance. Riedel et al. (1980) also examined managerial factors in a study of Navy civilian employee perceptions of organizational effectiveness. Broedling (1977) surveyed the perceived leadership techniques among a sample of Navy civilian and military managers.

Physical fitness is generally considered to affect worker performance too. Alcohol and drug abuse are the factors that have been studied in this area in the military. A DoD worldwide survey (1983), still continuing, addressed the current use of these substances and their effect on work performance. In addition, Manley et al. (1979) and (1980b) attempted to assess the degree of alcohol-related problems among Air Force civilian employees and produced related information about job satisfaction, work involvement, and stress.

The aforementioned issues are also of importance in considering motivation of civilian personnel who are paid with nonappropriated funds. HQDA, ODCSPER (1985) examined practices, policies, and regulations in this area, which include job classification, manager-employee relations, incentives and awards, and training opportunities.

PHASE III: DEVELOP MOTIVATIONAL STRATEGIES

Background

In this research area, there were a number of potent. strategies identified that might enhance motivat. individual level. These include:

- Develop individual productivity standar , electronics assembly or specific   civilian personnel office;

- Assess optimum incentives rewar a monetary and non-moneta alternatives to the performan
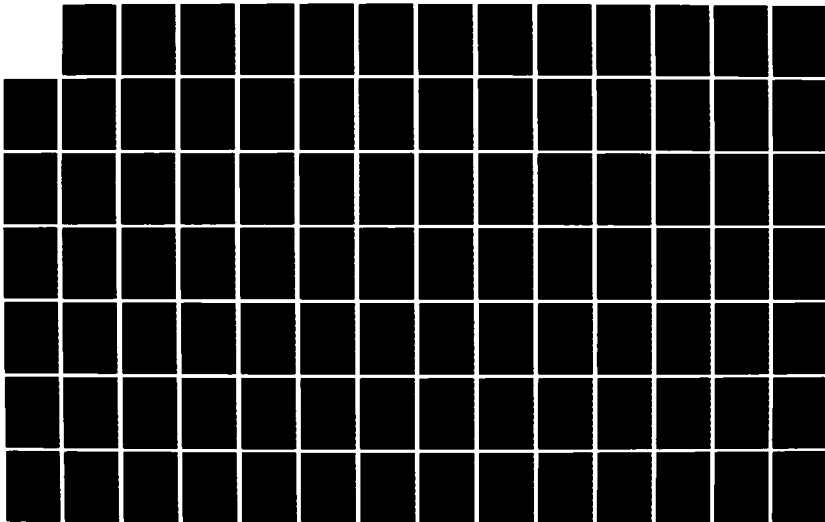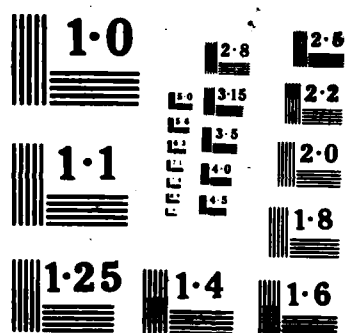
- Identify incentives necessary to increase acceptance of relocations; look at setting up a special mobility pool with higher compensation for greater mobility;

- Identify options to increase accountability and responsibility of managers; establish incentives for efficient personnel management;

- Identify feasible options to enhance physical fitness, including time allocations for such activities;

Existing Knowledge

Many strategies to increase motivation have been studied. Oliver and van Rijn (1983), with the Army Research Institute, did an extensive study of motivational methods to improve productivity in Army organizations. Their research cited the success of gain-sharing programs, quality circles, and the importance of integrating an organization's goals with the employees' personal goals. Bachner and Turner (1983) also cited four examples of the success of gain-sharing as a way to increase worker motivation.

Caldwell (1978) discussed the growing interest in improving morale and motivating employees through loosening the rigidity of work structures and then involving employees in goal setting and work planning as is done with the use of quality circles. This concept is borrowed from Japanese industry and is simply the use of employees as "consultants" in developing procedures to enhance productivity. Atwater (1981) surveyed the involvement of Navy organizations in productivity improvement programs in general, and quality circles in particular. Law (1980) looked at the growth of quality circles in American organizations, focusing on the Norfolk Naval Shipyard program.

The Rysberg (1981) motivational analysis dealt with whether a merit pay system can both motivate and reward employees and what alternatives are available when money is an insufficient motivator.

There is also extensive literature on performance appraisals as a means of increasing employee productivity, enabling the worker to be kept informed of his performance as it relates to organizational expectations and to work out any difficulties which may have arisen. Ratliff and Toedt (1978) discussed problems that undercut the Air Force's civilian appraisal program and outlined a research plan to develop a new evaluation system. Other sources include DeMarco and Nigro (1983), Edwards (1983), Hyde and Cascio (1982), Thayer (1981), Ralph (1980), and Holley (1978).

As noted previously, the China Lake Demonstration Project is an experiment with performance-based pay systems (OPM 1984-86). Earlier, Shumate et al. (1981) reported on a performance contingent monetary reward system and the GAO (1980f) looked at ways to improve federal improvement management and use of productivity-based reward systems.

More flexible work schedules for 250,000 Federal employees introduced in the late 1970's have gained universal acceptance.

Finally, Rand (1981) examined the Air Force's program to control alcohol abuse and found only a modest impact on alleviating the problem.

PHASE IV: TEST AND EVALUATE MOTIVATIONAL STRATEGIES

Background

The last phase of the motivational productivity research array includes:

- Test and evaluate the cost-benefit ratio of selected incentives and motivation enhancing options;

- Evaluate the current performance award system and recommend changes.

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Existing Knowledge

The most visible experiment with pay and performance is the China Lake Demonstration Project. OPM 1984-86 with eight different reports has extensively evaluated the approach. One report specifically looked at the effect of performance-based pay on employee atittudes (June 1985). Interviews of participants by Wilson (1985) give the program high marks. Earlier, the Naval Post-graduate School (1983) examined managerial attitudes in the demonstration project. OSD EXPO evaluations will be conducted over the next two years.

Another productivity experiment was reviewed by Mroczko and Northcutt (1980). This project at Kelly Air Force Base included procedures for job enrichment, incentive awards, and group competition. OPM (1980a) described its Workforce Effectiveness and Development Group's program which documents exemplary Federal productivity practices. The value of the Productivity-Enhancing Incentive Funds Program was specifically cited.

As previously mentioned, the Air Force (1983) studied the effect of quality circles. It found their use had no relationship to on job effort or work group performance. However, OPM (1982c) reported the successful use of quality circles to improve productivity at the Norfolk Naval Shipyard.

Pritchard et al. (1981) reported the effect of feedback and goal-setting techniques on productivity in two groups of Air Force clerical employees. Potential application to other situations is discussed. Dockstader (1977) tested the hypothesis that individuals will spontaneously set performance goals for themselves when they receive feedback on their standard of performance.

Another strategy for improving motivation that has been extensively evaluated is flex-time. Both GAO (1985a) and OPM (1985b) concluded that alternative work schedules were beneficial in improving both employee motivation and organizational productivity. However, OPM (1982a) conducted an evaluation of flex-time which showed that its success varied by type. Management discontent with some of the experiments caused 16 of 93 agencies to abandon the procedure. Army and

Air Force units were among those seeking to quit, alleging the difficulty of accommodating military operations to flexible work schedules. Senior military personnel in an Air Force experiment disliked the flexibility given the civilians.

Critics of flex-time, such as Rainey and Wolf (1981), (1982), raise the issue of adverse long-term effects of alternative work schedules. On the other hand, Kissler et al. (1980) reported that at NPRDC flex-time had no effect on productivity but that it reduced the use of sick time which produced a considerable net savings. Finally, Ronen and Primps (1980) survey of 25 public agencies showed that flex-time generally improved productivity through better employee attitudes toward work and the reduction in absenteeism.

Evaluations of monetary award programs have been made consistently over the years. The HQDA, ODCSPER (1983) evaluated the Army's use of cash awards and found there was confusion between cash awards for high level performance and the then recently introduced merit pay system. It recommended the establishment of a one-system approach to employee recognition. An HQDA, ODCSPER (1977) study showed its civilian awards program was equitably administered.

A Naval Postgraduate School (1982) study of merit pay found several problems with the program. Other assessments of the use of monetary rewards for superior performance were done by Bretton et al. (1978), Shumate et al. (1978), and Dockstader et al. (1978). These researchers reported that economic incentives to reward individual performance did improve task performances.

Finally, a GAO (1981f) evaluation of the senior executive service performance awards cited several major flaws. These included the use of factors other than performance in selection criteria.

MILITARY-CIVILIAN RESEARCH ARRAY

OVERVIEW

The effectiveness of military-civilian relationships elicited more interest than any other objective with the exception of productivity issues, and was responded to with a number of parallel ideas from both the military and the civilian respondents. An underlying theme in many of the responses indicated that civilians felt like "second-class citizens" in the Army structure -- and a number of military recognized this perception as being valid. There was also general agreement that, if the relationship were to change, the military would have to take the lead in making those changes happen. Another common assumption was that the difficulties in working relationships stemmed primarily from ignorance, and hence could be eradicated by each increasing knowledge about the other's occupational culture.

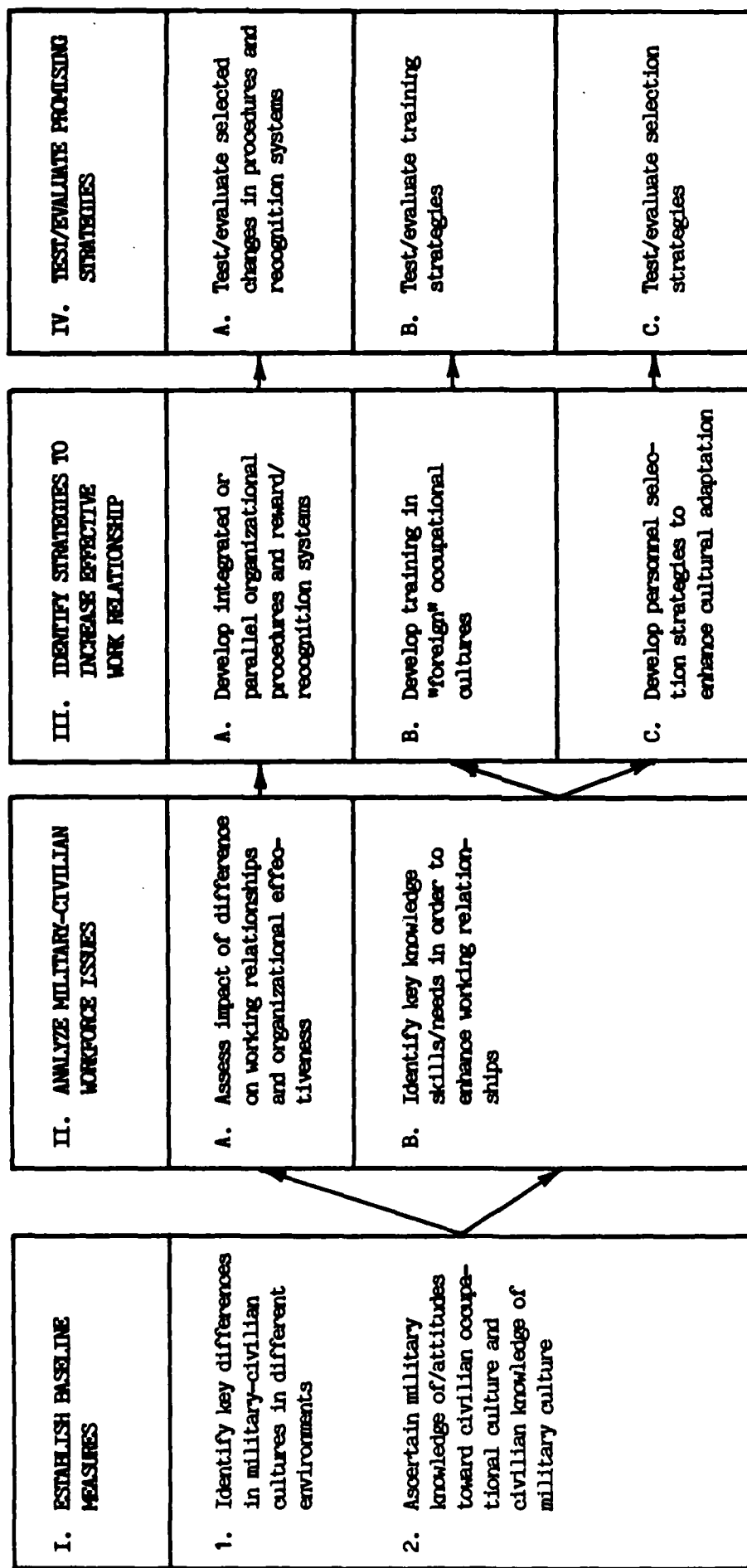The research areas depicted in the military-civilian research array are on the following page.

PHASE I: ESTABLISH BASELINE MEASURES

Background

- Identify key differences in military-civilian cultures in different environments; and

- Ascertain military knowledge of/attitudes toward civilian occupational culture.

The majority of informants emphasized the differences between the military and the civilian occupational cultures, e.g., the military individual gets promoted, then gets a new job while his civilian counterpart gets a particular job then gets a promotion. The military can clearly see the linkage between his or her training and promotion, while civilians see little apparent relationship. Aside from this relatively superficial type of difference, research should be designed to systematically ascertain differences in value systems between the military and the civilian subcultures, particularly differences in motivation, or organizational commitment. Such a study would attempt to pinpoint potential conflicts of values and analyze their implications for

MILITARY-CIVILIAN RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES

1. Identify key differences in military-civilian cultures in different environments

2. Ascertain military knowledge of/attitudes toward civilian occupational culture and civilian knowledge of military culture

II. ANALYZE MILITARY-CIVILIAN WORKFORCE ISSUES

A. Assess impact of difference on working relationships and organizational effectiveness

B. Identify key knowledge skills/needs in order to enhance working relationships

III. IDENTIFY STRATEGIES TO INCREASE EFFECTIVE WORK RELATIONSHIP

A. Develop integrated or parallel organizational procedures and reward/recognition systems

B. Develop training in "foreign" occupational cultures

C. Develop personnel selection strategies to enhance cultural adaptation

IV. TEST/EVALUATE PROMISING STRATEGIES

A. Test/evaluate selected changes in procedures and recognition systems

B. Test/evaluate training strategies

C. Test/evaluate selection strategies

harmonious working relationships, productivity, recruitment, etc. One participant suggested beginning with a study of the values embedded in the Uniform Code of Military Justice as contrasted to civilian codes.

A number of individuals pointed out that the military-civilian relationship varies by location: it was suggested, for instance, that the relationship is different in an OCONUS environment where the Army constitutes not just the working culture, but the community as well. One interviewee suggested that a study focus on the perceptions about civilians held by military just coming to Headquarters from the field where it is common to see civilians primarily as "base-ops people who never show up to fix your house". The implication was that such perceptions change as there is more interaction with civilians in the Washington context. Similarly, it was suggested that there is a difference in attitude on the part of more junior officers who have relatively little experience working closely with civilians as opposed to more senior field grade officers who tend to think *more highly* of their co-workers.

Whatever variations in perceptions and attitudes exist, it was commonly acknowledged that military, of whatever rank and location, are ill-informed about the complexities of the civilian personnel system and critical of those parts of it which seem to interfere with their ability to manage their workforce. There are other real differences in the occupational relationship aside from personnel appraisal forms, the one aspect of the civilian personnel system which received the most opprobrium from military respondents. As one individual put it, "we say we're 'one family' but we don't practice it and the rules won't permit it". The inclusion or exclusion of civilian personnel in Department of Army regulations around smoking, testing for AIDS, priority for child care facilities, drug and alcohol use, are examples of the day-to-day differences in the occupational cultures. These differences may be more pronounced in an OCONUS situation, at least between the military and German civilians interviewed, where local work councils, as in Germany, represent German nationals and can call into question the application of Army regulations to their workforce. In the CONUS situation, employee unions may play the same role.

Preliminary research efforts would be directed toward identifying key differences between groups and the critical areas lack of knowledge that affect the quality of working relationships.

Existing Knowledge

The differences between the military and civilian personnel environments have been well documented. Most recently, the Army War College (1985) explored the differences in military and civilian culture within the Department of Defense. Resnick (1985) compared the attitudes of civil service engineers with those in the military. He noted that civil service engineers viewed themselves as engineers who happened to be working for the government. In direct contrast, the military engineers see themselves as government employees first.

Several earlier studies were undertaken for the Air Force. Manley et al. (1980a) examined attitudinal differences between military and civilians working for the Air Force, while Baker (1977) studied behavioral factors. Garza and Carpenter (1974) found clear differences between airmen and civil service personnel with similar jobs. Cowan (1977) looked specifically at Air Force military and civilian personnel in civil engineering specialties and Landolt (1978) compared Air Force military and civilian personnel specialists.

Some attempts have been made to ascertain the attitudes which military and civilian personnel have toward each other. Wermuth (1979) explored tensions between military and civilian members of the "armored convertible" defense establishment. Korbol (1978) identified sources of animosity between Air Force military and civilian employees. The Long (1977) study of the "sandcrab syndrome" found that attitudes of Naval officers toward their counterparts among civilian managers and technical personnel were not as negative as hypothesized.

PHASE II: ANALYZE MILITARY—CIVILIAN WORKFORCE ISSUES

Background

The next research stage would consist of:

- assessing the impact of identified differences on day to day working relationships and the impact on organizational effectiveness; and

- identifying the key knowledge and skills needed in order to enhance both working relationships and organizational effectiveness.

In one interview it was noted that there is a "total focus on 'training the warrior'" and that such a "fixation" has consequences in both the "TOE Army and the TDA Army." One suggested consequence was that the military were "rank amateurs" when it comes to managing civilians. Another source of friction came from perceptions such as: "we have to stay, you guys get to go home (at 5:30), you get paid more". From the civilian point of view, one study participant wanted to know if the "present uncertainty" in civil service (e.g., reduced benefits, potential RIFs, commercial activities reviews) had any measurable impact on organizational effectiveness and hence the Army's readiness mission. Yet another individual, referring to the Army Corps of Engineers, noted that the Corps has a large number of highly trained civilians who work for "transient, less qualified military", and wondered about the consequences that result when a non-technical supervisor was responsible for managing technical staff -- a situation that exists in many contexts other than the Army Corps of Engineers. This same individual was extremely sympathetic toward highly qualified civilians who know they can never achieve the top positions in a military organization, who "hit their heads against the military veneer", again with unknown implications for organizational effectiveness.

This stage of research would go beyond the anecdotal level to assessing those differences in the two cultures which were in fact detrimental to a "climate of respect" and in what ways. A second research endeavor would identify key knowledge skills and needs of participants in both cultures. This research would look not only at "training the military

in sensitivity to civilians" but looking at methods to maintain stronger ties to and better knowledge of the military culture in, for example, civilian dominated agencies (such as labs or certain TRADOC and AMC installations) and among the growing number of scientists and engineers who have had no previous military experience. One source of potential data might result from a systematic examination of the vast body of research that has been conducted in terms of military personnel, resulting in a transferral of that data which is equally valid in terms of civilian personnel. Those areas which are delineated as being uniquely military or uniquely civilian would then become the foci for strategies leading to more effective work relationships.

Existing Knowledge

Differences between the military and civilian cultures inevitably affect working relationships and organizational effectiveness. Some of the impact has been identified in the research literature.

Resnick's (1985) commentary on the differences between military and civilian engineers noted that the civilians were more interested in developing technology whatever its use while the military engineers considered potential applications first in technology development. Crum (1983) surveyed attitudes of personnel toward civilian and military supervisors. He reported that civilians felt the military bosses were better supervisors, while, at the same time individuals with civilian bosses were more likely to feel there was a good working relationship between civilian personnel and the military.

Earlier, Wermuth (1979) asserted that built-in procedures of the military establishment discriminate against many civilians and tend to relegate civilians to a second-class status. Johnson (1977) reported on resistance to the use of civilians as DoD program managers and cited the advantages of using civilians in these positions.

Eas (1980) and Klein (1980) examined the relationship between military and civilians who worked for the Navy. Broedling et al. (1981) reported on the relationship between senior Navy civilian and military executives. The need for improved relationships between military and civilian mana-

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gers was a subject for discussion at the Conference on Productivity and Work Motivation in 1978 (See Broedling and Penn; Nebeker).

The literature search did not identify any studies of key knowledge skills/needs in order to enhance working relationships.

PHASE III: IDENTIFY POTENTIAL STRATEGIES TO INCREASE EFFECTIVE WORK RELATIONSHIP

Background

Following the specification of major issues and knowledge gaps which impede effective work relationships would be specific strategy development to directly address those impediments. Such strategies would fall in three different areas:

- Develop integrated or parallel organizational procedures and reward/recognition systems;

- Develop training in the "foreign" occupational culture; and

- Develop personnel selection strategies to enhance cultural adaptation.

A major focus of concern in military-civilian relationships was the management of civilians by military and vice versa at the point where employee evaluations were involved. Military interviewees expressed frustration with the lengthy and time consuming appraisal forms, particularly in contrast to their own rating system. Civilians, on the other hand, noted that military managers were often ignorant of the importance of such forms and uninformed as to the process of filling them out. Military expressed the same criticism of civilians supervising military personnel. As noted above, interviews occurred before the shortened appraisal forms went into general usage. It might be that the new civilian appraisal forms -- more consistent in length with those used by the military -- would dissipate some of the tension emanating from this situation. It may be possible to find

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other areas where the procedures used by the two systems can become more similar without necessarily attempting to make the occupational cultures identical.

A topic related to issues raised in the motivational array had to do with a civilian concern that the military chose to concentrate upon cash awards as the primary avenue of recognition, although there were many other potential recognition sources for civilians. The military culture is replete with symbolic recognition of and reward for culturally-approved behaviors: "RHIP" is not limited to financial privilege, but covers a wide range of items and behaviors -- the most obvious being medals and ribbons, saluting, the use of formal rank titles, rising when a general officer enters a room, etc. There may be many potential recognition forms that could accrue to appropriate civilians, without submerging or radically altering either system.

A key strategy would involve the transmission of knowledge about one culture to participants in the other culture. One interviewee pointed out the need to develop a system "where, from the beginning, the military says: 'as leaders, we have to know about their (civilian) culture'"; this knowledge would begin during ROTC, continue in the Academy and OCS, and become a permanent component of military leadership training. Such a strategy would mitigate against the military "just stumbling into" the management of civilians as frequently happens, and would pinpoint what the military needed to know about civilian management at what point in their careers. Conversely, civilians would also systematically acquire a knowledge of the military culture at various stages of their careers, and most specifically when they moved into management positions which included military employees.

A third strategy suggested in an interview would be to select individuals into the civilian workforce who are good at and comfortable with working with the military. How this selection process might take place would depend upon the results of Phase II research which identified knowledge and skills which lead to effective working relationships.

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Existing Knowledge

The literature search did not identify any studies which developed integrated or parallel organizational procedures and reward/recognition systems.

Training strategies to improve the working relationship between military and civilian personnel have been developed over many years. Recently, the Army War College (1985) presented ways to overcome actual or potential problems between military and civilian personnel within the Department of Defense.

The Air Command and Staff College (1986) has prepared a videotape of its "charm school," an instructional system that is used to motivate military and civilian workers to improve their personal interaction and communication skills.

Stupak (1981) developed behavioral techniques to ease the tensions between military officers and civilian careerists in the Department of Defense and the Defense Systems Management School (1974) prepared a case study of the project management team to enable military officers and their civilian counterparts to have a better understanding of each other's needs and goals.

As far back as 1965, Paulsen, in a dissertation at the Naval Postgraduate School, explored military-civilian management problems and personnel conflicts. The thesis provided a basis for developing techniques to respond to these issues.

The literature search did not identify any studies on the development of personnel selection strategies to enhance cultural adaptation.

PHASE IV: TEST AND EVALUATE PROMISING STRATEGIES

Background

The three areas in which to evaluate strategies would be in:

- selected changes in procedures and recognition
  systems;
- training strategies at different levels; and
- selection strategies.

One interviewee, who noted that a major managerial issue was the fact that key military leaders were able to spend relatively little time in one organization, suggested that a test situation be devised to look at the impact of longer tours of duty. Specifically, the Army might set up two or three situations where "green suiters" constitute a major part of the management system; these individuals would remain in place for five to six rather than two to three years. At the end of this period, research would "compare the effectiveness of these organizations with similar organizations which suffer normal military turbulence".

Existing Knowledge

The literature search did not identify any studies pertinent to testing selected changes in procedures and recognition systems, evaluating training strategies, nor to testing selection strategies.

CIVILIAN FUNCTIONS RESEARCH ARRAY

OVERVIEW

The majority of the issues raised in this section involve the tripartite relationship among military functions, civil service civilian functions, and contractor functions, both during peacetime and under a mobilization situation. Also of interest were issues involved in civilian management and supervision of contractors. The fundamental question was whether the assumptions underlying mobilization plans were "tested, testable, valid or realistic".

The research areas for determining appropriate civilian functions are depicted in the research array on the following page.
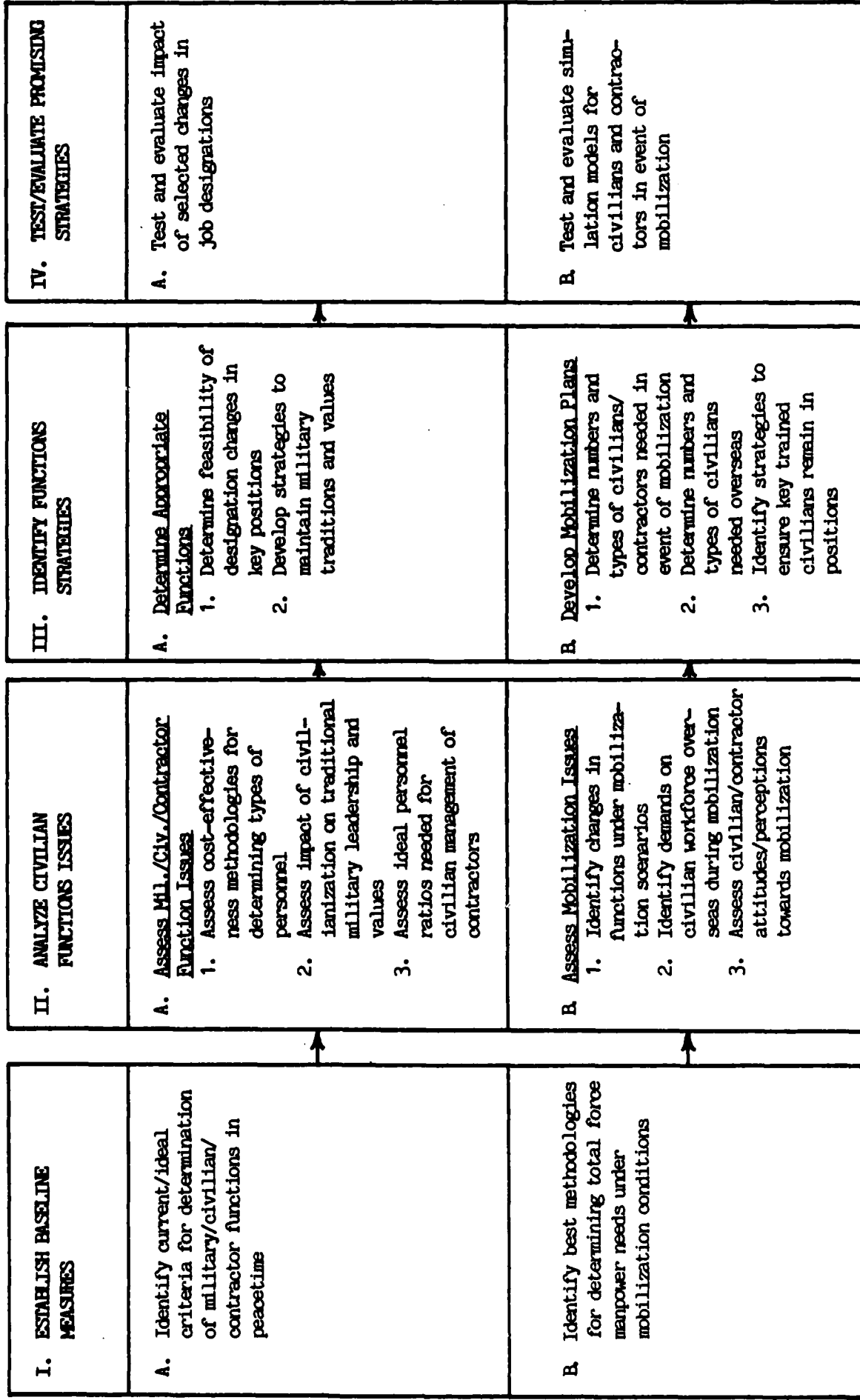
PHASE I: ESTABLISH BASELINE MEASURES

A. Identify Both Current and Ideal Criteria for Determination of Military/Civilian/Contractor Functions in Peacetime

A number of interviewees expressed the opinion that, at this point in time, the Total Force concept had yet to be clearly defined beyond the most general, conceptual stage. Related to this was a need to develop criteria more explicit than that used by the DA civilianization program for determining whether a position should be military or civilian, and a defensible methodology to determine the interchangeability of military with civilian personnel. Another concern was to be able to establish the relative cost-effectiveness of civilian versus military spaces, both during peace and during mobilization.

The civilian versus contractor function was an issue raised most often at local installations, where the Commercial Activities, A-76, area was a focus of concern. As a wage-grade focus group participant explained the situation at Fort Sill, "we're just waiting for the axe to fall -- and there's no way to fight it." A number of informants noted that the formulas in place for a Commercial Activities review did not reflect a number of costs, both financial and otherwise, which the government incurs in the review pro-

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CIVILIAN FUNCTIONS RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES

A. Identify current/ideal criteria for determination of military/civilian/contractor functions in peacetime

B. Identify best methodologies for determining total force manpower needs under mobilization conditions

II. ANALYZE CIVILIAN FUNCTIONS ISSUES

A. Assess Mil./Civ./Contractor Function Issues
1. Assess cost-effectiveness methodologies for determining types of personnel
2. Assess impact of civilianization on traditional military leadership and values
3. Assess ideal personnel ratios needed for civilian management of contractors

B. Assess Mobilization Issues
1. Identify changes in functions under mobilization scenarios
2. Identify demands on civilian workforce overseas during mobilization
3. Assess civilian/contractor attitudes/perceptions towards mobilization

III. IDENTIFY FUNCTIONS STRATEGIES

A. Determine Appropriate Functions
1. Determine feasibility of designation changes in key positions
2. Develop strategies to maintain military traditions and values

B. Develop Mobilization Plans
1. Determine numbers and types of civilians/contractors needed in event of mobilization
2. Determine numbers and types of civilians needed overseas
3. Identify strategies to ensure key trained civilians remain in positions

IV. TEST/EVALUATE PROMISING STRATEGIES

A. Test and evaluate impact of selected changes in job designations

B. Test and evaluate simulation models for civilians and contractors in event of mobilization

cess. One participant observed, "We had ninety people studying whether to convert to a private contractor -- how much did that cost?" The intangible costs included demoralization, lowered productivity, and problems both with retention and recruitment of skilled government employees. According to study participants, there should be more accurate criteria for determining the trade-offs between government worker functions and contractor functions.

B. Identify Best Methodologies for Determining Total Force Manpower Needs under Mobilization Conditions

Background

Similar to IA above, interviewees expressed a need to clarify the ideal civilian and contractor roles and end-strengths needed for various mobilization scenarios. There is a need for manpower modeling techniques which do not concentrate solely upon military manpower, but take into consideration the structure and balance needed among military, civilian, contractor and reserve personnel.

Existing Knowledge

Several studies have examined criteria for military/ civilian/contractor functions. The GAO (1979c) considered this issue and recommended that the government develop a well-defined policy to determine the appropriate functions for each of these personnel. A similar study of the defense establishment had been undertaken by Binkin (1978) who also recommended changes in the system then in existence.

Earlier, the Department of Defense (1976), as a component of manpower usage of the mid-1970's, presented an overview of contract services. The report discussed the policy for securing contract services, addressed legal and political issues, highlighted DoD experience with contract services, and discussed systems for reviewing contract services.

Moore et al. (1984) studied manpower requirement determinations for the Office of the Secretary of Defense, including an examination of how the service decides between

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civilian or military labor. It provided recommendations for changes in manpower planning to make the civilian labor force more efficient.

A number of studies have looked at Army manpower mobilization needs. The GAO (1984) recommended that the Army improve its pre-mobilization planning. One major suggestion was to develop a system which would enable installations to identify key civilian employees who are also reservists. The Army agreed with the GAO recommendations.

Previously, the HQDA, ODCSPER (1982) reviewed MACOM and activity civilian personnel offices to determine if these operations were effectively carrying out their responsibilities for mobilization planning. It recommended greater coordination of planning efforts. In addition, both the Army Materiel Development and Readiness Command (1978) and the Army Depot System Command (1978) developed the means to determine manpower base requirements in the event of a mobilization. Finally, the Department of Defense Manpower Requirements Report evaluates the Department's ability to mobilize manpower in a crisis.

A number of sources provide civilian manpower data. DoD publishes monthly Civilian Manpower Statistics, providing current data on the defense establishment's civilian workforce, except for statistics on the National Security Administration. DoD also publishes annually Selected Manpower Statistics with data on both civilian and military defense manpower.

PHASE II: ANALYZE CIVILIAN FUNCTIONS ISSUES

A. Assess Military, Civilian and Contractor Functional Issues

The primary issues in this cluster concerned:

- the need to develop cost-effectiveness methodologies for determining types of personnel;

- the possible impact of civilianization on traditional military leadership and values; and

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- the need to assess the skills and management struc-
  ture needed for civilian management of contractors.

Background

Once valid criteria are developed for determining
appropriate functions for military, civilian and contractor
personnel, the next step would be to develop methodologies
for determining the relative cost-effectiveness of using
each type of personnel. A number of interviewees, as noted
in Phase I, expressed dissatisfaction with the methodology
now in place for the A-76 reviews. It was noted for example
that using the current formula, cost-savings from using
contracted personnel is projected based on the contractor's
ability to offer low-cost benefit packages. The fact that
such front-end savings potentially contributes to a high
turnover rate and subsequent recruitment costs is ignored.
Further, the A-76 process is based on contractor cost-
estimates on initial bids, which do not anticipate cost
increases reflected in later contract amendments or modifi-
cations. Interviewees wanted to see more accurate criteria
developed for the determination of costs incurred by govern-
ment workers versus contractors.

Another issue raised in conjunction with the military-
civilian-contractor relationship was the possible impact an
increasing number of civilian and contractor personnel might
have on the Army as a military culture. The question was:
How can we maintain a sense of Army traditions and loyalty
to this institution if there are fewer and fewer military
leaders?

A third area of inquiry had to do with concerns about
the abilities of civilian personnel to monitor potentially
increasingly large numbers of contractor personnel. What
would be an ideal ratio of civilians to contractor and what
are the specific skills and abilities needed to effectively
assure contractor efficiency and compliance?

B. Assess Mobilization Issues

Stemming from the basic research need to identify bet-
ter methods to determine manpower needs under mobilization
conditions are three related issues:

- the need to identify changes in job functions under various mobilization scenarios;

- the need to identify potential demands on the overseas civilian workforce during periods of mobilization; and

- the need to assess civilian and contractor attitudes towards mobilization.

Background

That manpower requirements will change drastically under warfare situation is not in doubt; what is needed is to think through the possible changes which will take place in the civilian and contractor arena. For example, at a tank repair depot or an arsenal, much larger numbers of civilian personnel may be required by the Army at the same time defense contractors may be actively recruiting and competing for the identical skilled personnel. The need is not just to ascertain how many civilians may be needed, but where they are to come from, particularly in the light of contractor competition. Such a study would also attempt to predict whether the Army could meet its civilian personnel needs in the event of mobilization and suggest strategies to acquire them in the event the study predicted shortfalls in specific Army functional areas.

The mobilization area was of particular concern to military and civilian Roadmap participants from USAREUR. As one military individual pointed out "our infrastructure would collapse OCONUS without civil servants in the event of mobilization. It is civilians who would be charged with the tasks associated with operating all the military communities. Although there were, at the time of the interviews, a number of civilian positions designated as "Essential" in emergencies, some informants questioned whether the numbers involved were adequate or optimal. The question was raised of whether or not a form of "combat pay" should be provided for these critical positions. Clearer procedures to respond to family and community needs were also identified as a need.

Another unexplored area is civilian and contractor attitudes toward mobilization. The military concept of "readiness" is a basic part of an occupational world view, but is probably not one shared by the majority of civilian or contract personnel. One specific concern raised, for example, was how an installation could respond to a contractor strike in a period of mobilization. A civilian individual in an "emergency essential" position mentioned during a Roadmap interview that his wife viewed his special designation as unrealistic and refused to take it seriously, and he himself was not sure how realistic it in fact was. Whether or not his attitude -- or his wife's -- was common is unknown, but should be explored given that attitudes often influence behavior, and such behavior may be critical in emergency situations.

Existing Knowledge

The proper use of contracting-out services has been extensively examined. The GAO (1985b) evaluated twenty DoD functions which were contracted out and found most of the savings were only in five of the contracted areas. Two prior GAO studies considered this issue as well. A GAO (1981b) report found questionable cost comparison practices and a GAO (1981c) study found that federal agencies were using contractor personnel for work that should have been done in-house, and at the same time, government employees were providing commercial services that often were more cost-effective if done by contractors.

Broedling et al. (1980) had found that contracting-out was used at a Navy industrial facility in response to personnel ceilings even when cost-benefit accounting might not have warranted it. However, Handy and O'Connor (1984), under contract to the Office of the Secretary of Defense, identified a number of cost savings measures in providing services that occurred as a result of competing certain base services between in-house providers and private contractors. Costs dropped by an average of 27% whether the service was contracted out or kept in-house.

Earlier, Beltramo (1974) recommended that further substitution of civilian for military personnel would reduce costs. The Central All-Volunteer Task Force (1972) had estimated maximum potential civilianization of enlisted

support positions in the United States, examined comparative costs of civilian and military personnel in various occupational fields, and finally, examined the feasibility, desirability and cost savings of specific contingency plans for civilianization. Finally, Cason (1972) argued that trade-offs between military and civilian power were obscured by the fragmented process through which authorizations of future military and civilian manpower were developed for the Army. He called for the establishment of a unified process.

The literature search did not identify any studies which assessed the mobilization issues discussed in this section.

PHASE III: IDENTIFY CIVILIAN FUNCTIONS STRATEGIES

A. Determine Appropriate Functions

Background

Strategies to address the issues identified in Phase II would include:

- Determine the feasibility of changing occupational designations in key positions; and

- Develop strategies to maintain military traditions and values.

B. Develop Mobilization Plans

Background

Based upon the analyses conducted as part of Phase II research, it should be possible to develop plans which would more clearly delineate:

- the numbers of civilians/contractors needed in specific Army organizations in the event of mobilization;

- the numbers and types of civilians needed in overseas situations; and

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- strategies to ensure key trained civilians remain in their designated positions.

Existing Knowledge

The literature search identified two studies which suggested strategies for improving mobilization plans. Stewart Analysis (1984), under contract to the Office of the Secretary of Defense, developed recommendations to improve mobilization strategies. The focus of the report was on the use of military retirees. Linton and Co. (1979) also examined DoD plans for mobilization and recommended actions to clarify and strengthen the management and planning of wartime civilian power.

PHASE IV: TEST AND EVALUATE PROMISING STRATEGIES

Background

Testing and evaluation of strategies identified in Phase III would look at the impact of making selected changes in job designations from military to civilian or vice versa in terms of cost-effectiveness and increased productivity. Also in need of testing and evaluation would be training developed for civilians involved in contract management, and any new management structures (especially civilian to contractor ratios). Finally, it would be necessary to test and evaluate any simulations which were developed in terms of numbers and types of civilian and contractor roles during mobilization.

Existing Knowledge

The literature search did not yield any data pertinent to testing and evaluating strategies in the civilian functions area.

FUTURE CIVILIAN WORKFORCE NEEDS ARRAY

OVERVIEW

Of all the questions asked in the course of the Roadmap interviews, the issues surrounding future workforce needs elicited the fewest comments. A number of individuals noted that they had not thought through this area and were not comfortable dealing with it. Of the responses, a number were concerned more with the short-term future (e.g., FY 88 budget cuts) than long-term (e.g., the nature of the workforce in the 21st century). The paucity of comments in this area also reflects the Roadmap emphasis on management and personnel, rather than on manpower issues.

The research areas within future civilian workforce needs are depicted in the research array on the following page.

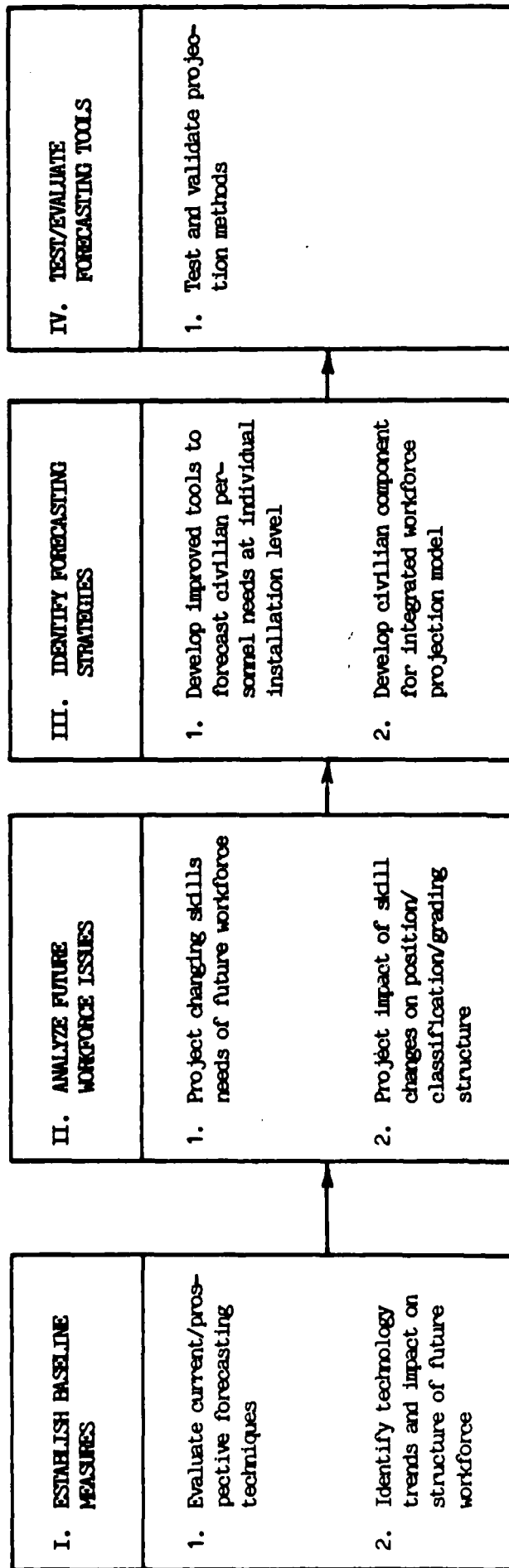## PHASE I: ESTABLISH BASELINE MEASURES

Background

There are two primary directions for basic research in this area, to:

- Evaluate current and prospective forecasting techniques; and

- Identify trends in technology and predict their impact on the structure and organization of the workforce in the future.

There appears to be little awareness of forecasting techniques for civilian manpower needs, or for projection models that look at an integrated Total Force structure. According to study participants, the military does employ sophisticated modeling techniques, but these do not take into account the need for either civilian or contractor labor in the future. A first stage research need is to evaluate current forecasting techniques in terms of their potential replicability for civilian needs, and to develop modified models that encompass demands in either peacetime or during future mobilization.

FUTURE CIVILIAN WORKFORCE NEEDS RESEARCH ARRAY

I. ESTABLISH BASELINE MEASURES	II. ANALYZE FUTURE WORKFORCE ISSUES	III. IDENTIFY FORECASTING STRATEGIES	IV. TEST/EVALUATE FORECASTING TOOLS
1. Evaluate current/prospective forecasting techniques	1. Project changing skills needs of future workforce	1. Develop improved tools to forecast civilian personnel needs at individual installation level	1. Test and validate projection methods
2. Identify technology trends and impact on structure of future workforce	2. Project impact of skill changes on position/classification/grading structure	2. Develop civilian component for integrated workforce projection model	

FUTURE CIVILIAN WORKFORCE NEEDS ARRAY (continued)

A second type of research involves identifying those trends in technology, particularly in the communications area, which will potentially affect the future civilian workforce structure and organization. There was particular interest expressed in the potential impacts of increasing automation, e.g., what might be the effect on human physiology of increased use of computers? Current usage levels are causing eye, neck and back strain. Another question involved trying to predict the potential effects of "information overload" on a workforce that has more data than it can handle for decision-making.

Existing Knowledge

There are numerous studies of forecasting techniques for military manpower. A joint effort of the Army Troop Support and Aviation Materiel Readiness Command (1978) developed forecasting procedures that included special emphasis on cause and effect relationships between manpower and workload indicators.

The Navy has done work in this area as well. The Naval Postgraduate School (1985) examined a wide range of manpower systems, and with this information, developed equations that describe the steady state distribution of personnel. NPRDC (1983) developed a civilian manpower planning model to forecast changes in Navy R & D Center scientific and engineering personnel. Hudak et al. (1982) sought estimating equations to forecast manpower requirements within the Navy's base operating support sector.

Earlier theoretical studies examined a variety of forecasting techniques. Walker (1979) discussed a modeling technique for projecting support manpower requirements as a function of workload and operational force levels. Two Carnegie-Mellon (1978) studies considered theories for manpower planning and design.

Hutchins and DiGialleonardo (1974) explained the Manpower Requirement and Resource Control System (MARRCS) that supplies R & D support. In contrast to previous efforts which focused on the supply of personnel, it focused on the demand for manpower resources. Finally, Charnes et al. (1974) studied the feasibility of creating a "multi-level model" by linking models for manpower and program planning.

The literature search identified a study for the Navy by Flack and Nichol on the Naval Integrated Storage Tracking and Retrieval System which examined the impact of technology on the future workforce. The study researched the effects of current technological change on people, organizational structure, jobs, and management practices.

Both Army Materiel Command (1985) and Department of Labor studies have considered technology trends and their impact on the future workforce.

PHASE II: ANALYZE FUTURE WORKFORCE ISSUES

Background

A second research phase involved looking at more specific issues within any future workforce scenario, and projecting:

- the changing skills needs of a future workforce; and

- the potential impact of skill changes on the present position, classification and grading structure of the civilian workforce.

An underlying question asked was: What kind of people with what kinds of skills will we need to recruit ten, twenty or thirty years from now? Will there be a need for more clerks, more program analysts or fewer? What types of new skills or different skills will be needed, and will individuals with these skills be available for recruitment into the Army civilian workforce? A related question was: What sort of organizational culture do we want to develop for civilian personnel in the future Army? How do we decide upon and then try to develop an "ideal" organizational climate which includes higher productivity levels, higher retention rates of skilled personnel, etc.?

A related question concerned the potential impact of increasing automation or robotics on the present structure of the civilian workforce. Many interviewees perceived that promotion is based upon the number of people supervised. What happens when, for example, an entire budget can be

prepared using the skills of fewer people but more sophisti-
cated computers? At the same time that a supervisor's
decisions must be equally sophisticated, he or she may be
supervising few individuals. Would this mean a lower grade
or not?

Existing Knowledge

The literature search did not identify any research
which projects skill needs of the future civilian workforce.

Technological change will alter the knowledge, skills,
and abilities needed on the job. Bikson et al. (1981)
discussed the implementation of information technology in an
office setting. Clegg (1979) looked specifically at how
jobs are re-designed. Monitoring the impact of new tech-
nology on the Department of Defense workforce was also one
objective in the development of an integrated occupational
stratification system (See David 1978).

PHASE III: IDENTIFY FORECASTING STRATEGIES

A. Develop Improved Tools to Forecast Civilian Personnel Needs at Individual Installation Levels

Background

The development of this type of forecasting strategy
would depend upon the use of historical data and would
encompass varying economic scenarios. The project would
involve analyzing the past occupational structure of the
Army, e.g., at five year intervals since 1960, in order to
determine past occupational trends. These trends might
assist in developing a prediction model for the future. For
each future interval (e.g., 1991, 1996, 2001) different
economic and demographic scenarios could be developed and
tested (e.g., full private sector employment and inability
to meet military recruitment goals and hence sever competi-
tion for labor in the civilian sector vs. high unemployment
levels and no skill recruiting difficulties for either the
military and civilian sector but a scarcity of college
graduate age cohorts and hence a scarce potential labor
pool).

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Included in this strategy would also be an analysis and prediction of types of occupational skills which may no longer be produced by academia or trade schools in sufficient numbers to meet employment needs. This analysis would be used to alert the Army organization to an anticipated need to "grow its own" in even larger numbers than is the case at the present time.

B. Develop Civilian Component for Integrated Workforce Projection Model

Background

Based upon an analysis of existing military manpower techniques and an analysis of the specific modeling techniques (if any) needed for projecting civilian manpower, the next research step would be to develop an integrated model which combines military, civilian, reserve, and contractor manpower needs for the future.

Existing Knowledge

General Research Corporation (1986) has developed the Civilian Personnel Management System Of Forecast (CIVFORS). CIVFORS will provide projection capability, enhance or supplement systems or procedures now employed, automate manual manipulations of data, and develop forecasting techniques where none now exist. The system is designed to provide a user friendly MIS and Decision Support System for projection of civilian manpower requirements, strength, personnel transactions under alternative policies during peacetime, mobilization and war (using currently available data).

Techniques for projection of alternative future military personnel scenarios have been developed and tested for ARI by ICS, but have not been applied to the civilian workforce.

PHASE IV: TEST AND EVALUATE FORECASTING TOOLS

What is necessary in this final research stage is to test and evaluate the simulations developed to forecast civilian personnel and an integrated workforce model.

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FUTURE CIVILIAN WORKFORCE NEEDS ARRAY (continued)

Existing Knowledge

The literature search identified a study by the Jet Propulsion Lab (1984) which compared the Army's hardware with its manpower methodology for projecting manpower, personnel, and training requirements. The evaluation showed that the methodology conformed fairly well with both the Army's manpower, personnel, and training user needs and other accepted manpower modeling techniques.

The literature search did not identify any research which validated projection methods.

IV. RESEARCH PRIORITIZATION PLAN

IV. RESEARCH PRIORITIZATION PLAN

PRIORITIZATION OBJECTIVES

The Roadmap provides a comprehensive overview of the universe of potential civilian personnel research topics. Further, it arrays these research topics into logical linear sequences designed to support Army mission objectives. It does not, however, define specific research projects to be conducted, nor does it indicate the relative priority of alternative research areas. These tasks require the application of judgments by appropriate Army decision-makers.

The conduct of a prioritization process is critical to transform the Roadmap from a reference document to a plan which guides the allocation of resources to specific studies and research and development efforts. All of the research areas described in the Roadmap may be desirable to pursue given unlimited resources. Since research resources in this area traditionally have been scarce, however, it is critical to identify those research areas that are likely to have the greatest yield in terms of results applicable to multiple objectives. A set of logical and soundly justified research priorities will simplify future planning and budgeting and should allow DAPE-CP and others in Army leadership to maximize opportunities to capture funding and insure that the research that is conducted is consistent with agreed upon Army needs.

Unfortunately, a number of factors make prioritization a difficult task:

- The number and diversity of choices available;

- The multiplicity of criteria that affect perceptions of priority; and

- The varying importance of different research areas to different Army constituencies.

Ideally, prioritization would result in a ranked listing of research areas and projects that represent the consensus of the Army leadership, using agreed-upon criteria tied to Army needs. The following sections briefly describe a conceptual approach to prioritization as well as a specific process designed to respond to that goal.

CONCEPTUAL APPROACH

Two key issues need to be resolved before a specific prioritization process can be determined:

- <u>Who</u> participates in the process; and
- What <u>criteria</u> are used to set priorities.

Participation

Broad participation in establishing priorities is potentially desirable for a number of reasons. First, as the interviews evidenced, different groups have legitimately different perspectives on what research is needed and useful to conduct. Secondly, obtaining wide consensus on a set of research priorities both increases the commitment of the participants and the perceived credibility and importance of the priority research areas.

On the other hand a smaller group is desirable for the sake of the efficiency of the decision-making process. In the final analysis, there is a small group of key decision-makers who must be committed to the plan and take responsibility for its implementation.

Consequently one option which the Army might consider is a dual stage process that allows for broad initial input, with refinement and final selections made by a smaller group. The initial group should include consumers of the research, researchers, and approvers and funders of research. The original group of interviewees (approximately 40) would be a logical and appropriate group for this purpose. The small group should be comprised of the central decision-makers in the civilian personnel arena. The Study Advisory Group could serve this purpose.

The Army of course may wish to consider other alternatives on who to include in the prioritization process. There are several possible variations on the proposed dual stage approach, including selective reductions in the number of participants at each stage, or a single group could both rate research areas and make final priority decisions. Members from the Modernization Task Force might be added to the list of participants. The Army can best determine who it wishes to participate, keeping in mind the objectives of both efficiency and building commitment and credibility.

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Criteria

While the literature is replete with numerous potential criteria for prioritization of research, there are basically three relevant categories of criteria that are useful in thinking about this project: Importance criteria, technical feasibility criteria, and financial feasibility criteria.

Measures of perceived importance or utility of research should be the primary criteria driving the prioritization process. Various practical issues, such as the likely availability of funds to support particular types of projects or the cost to complete a research effort, may ultimately determine the final selection of projects; but these are properly secondary judgments to be made within the context of a clear understanding of what research is most important to complete.

The concept of importance might be operationalized through three measures on which judgments could be made:

- The relative importance to the Army of improving effectiveness in a particular area (e.g., selection and screening, or the offering of attractive compensation package to enhance recruitment);

- The relative need for new information in order to be able to improve capabilities within an area; and

- The likelihood of being able to use research findings effectively to help reach an objective (i.e., likelihood of action being taken based on research results).

Participants could rate each research area against each of these three criteria on a Likert scale, the results would then be mathematically combined to produce an overall importance rating for each area.

Once research areas have been rated and placed into priority categories based on relative importance, a number of technical feasibility judgments must be made to break research areas down into specific projects and refine the assigned priority levels. Factors to be considered in this process include:

- The adequacy of existing knowledge in an area (to help determine where to begin within a sequenced array of potential research projects);

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- The likelihood of research success;

- The time required to complete the research; and

- The estimated cost to complete the research.

These judgments may be made by research experts, with information provided to decision-makers.

Finally, financial feasibility judgments must be made to determine which projects will be pursued through which potential funding mechanisms. Critical factors to consider include:

- The likelihood of funding support by agencies outside of the Army (e.g., OSD, OPM);

- The fit with the priorities and constraints of various potential Army funding sources (e.g., Army Studies Program, ARI, AMC, USAREUR Civilian Personnel);

- The availability of in-house Army expertise to conduct desired research.

TASK PLAN

To implement the dual stage prioritization approach described above, the following tasks would need to be carried out:

1. Design Procedures and Instruments

   1.1 Develop primary sub-arrays for each array in the convergence charts (e.g., for recruitment, sub-arrays would address compensation factors as an attraction, non-compensation factors as an attraction, marketing strategies, and selection and screening), and identify generic categories of research which cross-cut specific objectives.

   1.2 Prepare draft instrument for rating sub-arrays (research areas) on importance criteria.

   1.3 Develop analysis program.

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1.4 Prepare draft letter and supporting materials for participants.

1.5 Prepare agenda outlines for SAG priority-setting sessions.

2. **Conduct Initial SAG Session**

2.1 Review proposed sub-arrays, criteria, and instrument.

2.2 Review proposed participants and process for prioritization.

2.3 Make revisions as necessary.

3. **Conduct Survey of Participants**

3.1 Mail out survey.

3.2 Tabulate and analyze data.

3.3 Adjust sub-arrays as necessary and arrange into three priority categories or levels.

4. **Conduct Feasibility Analyses** (top two priority levels)

4.1 Identify proposed research projects and sequences based on assessments of existing knowledge.

4.2 Estimate time and cost parameters.

4.3 Estimate likely research success.

5. **Conduct Final SAG Session**

5.1 Review importance ratings and adjust assignments to priority levels as appropriate.

5.2 Adjust rankings as appropriate based on technical and financial feasibility criteria and data.

5.3 Tentatively identify potential funding sources.

6. **Document Results**

6.1 Write-up priority listing and outcomes.

A copy of a sample instrument that might be adapted for use in this effort is presented as Figure IV-1 on the following pages. These pages are excerpted from a Navy questionnaire used for similar purposes.

FIGURE IV-1

ILLUSTRATIVE PRIORITIZATION QUESTIONNAIRE

PRIORITIZATION INSTRUCTIONS

The questionnaire on the following pages is made up of 19 research areas contained in the Roadmap. Under each general area are specific research topics suggested by the study participants. The numbers in parentheses following each research topic indicate the pages in the Roadmap where each research topic is discussed in more detail.

Please read each research area first and rank it on the basis of three criteria.

The first criterion is the relative importance to the Army of improving effectiveness in a particular area on a 1 to 5 scale. A low score indicates that improving current effectiveness will make little contribution to the Army's mission, while a high score indicates that increased effectiveness would contribute greatly to the Army's mission.

DEVELOP TIMELY PERSONNEL PROCEDURES.

1	2	3	4	5
Slightly Important	Moderately Important	Important	Very Important	Extremely Important

The second criterion is the relative need for new information in order to improve capabilities in a particular area. A low score indicates that the information needed to improve effectiveness is already available; a high score indicates that new information or understanding is necessary before effective action can be taken.

DEVELOP TIMELY PERSONNEL PROCEDURES.

1	2	3	4	5
Little Need	Some Need	Needed	Important Need	Critical Need

The last criterion is your perception of the likelihood that research findings will be utilized effectively once they are obtained. A low score indicates the respondent's belief that the political, financial, or organizational climate is such that here is little chance that change will be made. A high score indicates that the area is "hot", and there is excellent potential for action based on research or study findings.

DEVELOP TIMELY PERSONNEL PROCEDURES.

1	2	3	4	5
Not likely	Somewhat Likely	Likely	Very Likely	Extremely Likely

To the right of each research area are 3 boxes. In the A box, indicate your scoring of "importance"; the B box is for your scoring of "need for new information"; the C box is for "likelihood of use". For example:

	A	B	C
DEVELOP TIMELY PERSONNEL PROCEDURES.	3	2	1

This would indicate that the respondent thinks that it is very important to improve effectiveness in the area of more timely personnel procedures, that only some new information is needed in order to improve effectiveness, but it is not likely that research findings would actually be utilized to develop such procedures.

The specific research topics listed under each general area have a space provided to the left. Please check those research topics which, in your opinion, are the most important ones to study. For example:

_____ Determine current time required for filling vacant positions for varous occuptions and activities.

_____ Identify techniques utilized by Army activities that fill vacancies most quickly, and assess transferability.

_____ Examine grievance handling procedures developed in the private sector and assess transferability.

Check as many or as few of these as you wish, and include comments or suggestions if desired.

In the line following the "comments" section, please indicate any potential funding source for the research area.

We very much appreciate your cooperation in this project. The questionnaire should not take more than a half hour to complete. Please return it within a week. If you respond to it in collaboration with other members of your staff, please indicate their names and position titles on the last page of the questionnaire.

Thank you!

	A	B	C

1. DEVELOP OPTIMUM MIXES OF MILITARY, CIVILIAN, AND CONTRACTED PERSONNEL.

1a. _____ Determine current nature and extent of contracting out. (20)

1b. _____ Determine cost effectiveness of contracting out. (20)

1c. _____ Determine current mixes of military vs. civilian personnel. (21)

1d. _____ Determine optimum mixes of military vs. civilian personnel. (21)

Comments: _____

_____

Funding Source: _____

	A	B	C

2. DEVELOP OPTIMUM RATIOS OF SUPERVISORS TO EMPLOYEES.

2a. _____ Assess current ratios, including civilian supervision of contractors. (26)

2b. _____ Develop standards for supervisory ratios. (26)

Comments: _____

_____

Funding Source: _____

	A	B	C

3. DEVELOP CREDIBLE, USABLE MODELS FOR PREDICTING CIVILIAN PERSONNEL NEEDED FOR ACTUAL AND CONTINGENCY ARMY SITUATIONS.

3a. _____ Review and critique existing civilian and military forecasting models. (26)

3b. _____ Develop most credible model. (26)

V. RESEARCH MANAGEMENT PLAN

V. RESEARCH MANAGEMENT PLAN

CHARACTERISTICS OF A RESEARCH MANAGEMENT SYSTEM

The development of the Roadmap and the execution of the proposed priority setting marks the beginning of a comprehensive research planning process. As depicted in Figure V-1 on the following page, a fully integrated research management system is comprised of seven major components:

- Goal Definition;
- Research Plan Development;
- Selection of Research Projects;
- Research Monitoring;
- Evaluation of Research Findings;
- Dissemination of Knowledge to Users; and
- Research Utilization.

The Goal Definition component provides an explicit statement of program goals and objectives. The Plan Development and Project Selection components provide a structure for translating program objectives into specific research needs and projects. These components have been addressed by the preceding sections of the Roadmap.

The primary function of the Monitoring and Evaluation components is to determine the actual contribution of individual research activities toward the accomplishment of the program objectives. These components involve:

- Coordination of relevant research projects sponsored by various organizations;

- Collation of findings; and

- Modification of the convergence charts and research plans based on evaluations of research results and implications.

The last components, Dissemination and Utilization, focus on what knowledge should be disseminated, to whom, and how. These components are critical to ensure that the research fulfills its intended role of accomplishing program objectives. Unfortunately they are often overlooked, thereby defeating the purpose of research and undermining support for the research program.

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FIGURE V-1

RESEARCH MANAGEMENT SYSTEM
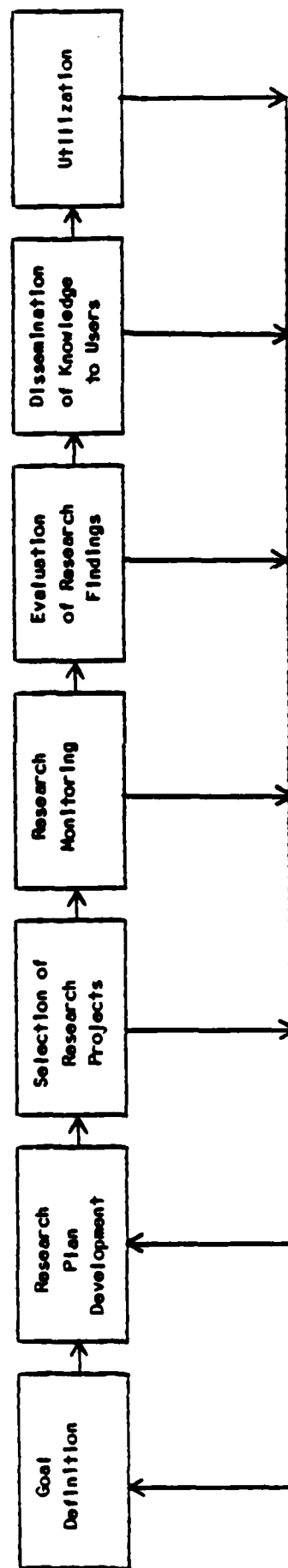
The key feature of the research management system is its dynamic nature. On-going feedback mechanisms are needed so that the research logic and the research priorities can be regularly revised as each project produces results. Both research findings or changes in Army or Federal policies and priorities may indicate that some research activity areas in the Convergence Charts are not fruitful and should be dropped, that new ones should be entered, or that relative priorities and logical sequences should be changed. Ideally, a research management system should provide the continuous capability to integrate research findings from various sources, incorporate changes in Army policies and priorities, disseminate findings and monitor their utility, and revise Convergence Charts and research plans and priorities on a regular planned basis. Such a system would enhance the credibility of Army civilian personnel research and help ensure that it becomes increasingly focused and moves progressively toward the support of Army mission objectives.

NEED FOR A RESEARCH PLANNING STRUCTURE

The management of a planned program of civilian personnel research requires considerable coordination among the Army offices that might sponsor or conduct the research, as well as with OSD, OPM or other agencies that might sponsor research very similar to that needed by the Army. If all of these resources could be coordinated under a common plan, the Army would make maximum progress along the research paths delineated in the Roadmap. Obviously, however, this requires an ongoing organizational capability to monitor, evaluate, disseminate, and revise planned research program.

Planned, objective-based research management is often neglected even by research organizations, and poses particular problems for organizations, such as DAPE-CP, where research is not the primary function. Without an on-going organizational capability, research plans can quickly become outdated and forgotten. It would be unfortunate, however, to fail to take full advantage of the collaborative effort expended thus far and the powerful tool that has been developed. With a relatively small on-going investment of resources, the Roadmap can continue to be a highly useful document to the Army Civilian Personnel community for years into the future.

Two organizational elements are crucial to managing the research system: (1) individual or unit with primary responsibility for coordinating civilian personnel research planning and (2) an inter-organizational body which guides the associated planning and decision-making. The remainder of this section presents some specific recommendations on how these elements might be incorporated into the Army civilian personnel structure.

PLANNING COORDINATOR

Experience in many organizations suggests that if there is not a particular individual responsible and accountable for research planning coordination, the function is likely to fall by the wayside. This is not to say that the individual should not be supported by other resources within the organization's hierarchy, but simply that one individual must serve as a focal point for information gathering and preparation for decision-making. Key issues to be considered in determining where such a person should be located organizationally include: level of available research expertise, scope of civilian personnel mandate, level of ownership of the Roadmap, and potential purview over both R&D and studies of the civilian workforce.

Given the current distribution of responsibility for civilian personnel R&D and studies in the Army, the Planning and Evaluation Office of DAPE-CP would appear to be the most logical place to locate this function.

The key responsibilities of the research planning coordinator may be grouped into five major categories:

FUNDING

- Locate sources of funds for as many of the high priority research efforts as possible, tapping such sources as DCSPER, the Army Studies program, ARI, AMC, other MACOM's with specialized civilian personnel concerns, non-Army sources (e.g., OSD, OPM), etc.

- Prepare budget justifications, statements of work, and other documents necessary to facilitate orderly research funding.

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MONITORING

- For all funded Roadmap projects, either serve as the Contracting Officer's Technical Representative (COTR) or coordinate with the COTR to keep informed of research progress and help insure that research is conducted in a manner consistent with Roadmap objectives.

- Coordinate with OSD, GAO, and other appropriate Federal agencies to keep informed of pertinent research that they support. This will include responsibility for keeping these agencies informed of Army priorities and interests, serving on advisory committee, etc.

EVALUATION

- Collect and review all pertinent research or study reports to determine how well they answer questions and meet objectives posed in the Roadmap, or suggest additional research required to meet objectives.

PLANNING

- Revise convergence charts and priorities annually, based on the evaluation of previous research and input from designated key civilian personnel decision-makers.

- Conduct a major re-assessment of the Roadmap objectives, research areas, existing knowledge statements, and priorities every five years.

- Prepare necessary materials for the budgeting process.

DISSEMINATION AND UTILIZATION

- Determine who would receive what information and its form.

- Provide for dissemination of readable, useful materials or meetings/workshops.

- Periodically assess the impact and utility of re-
  search in the field.

COORDINATING COMMITTEE

A research coordinating committee is needed both to
provide guidance and direction to the research planning
effort and to facilitate coordinated execution of the plan.
The membership of such a committee could be similar to that
of the current SAG.

Responsibilities of the committee could include the
following:

- Meet annually to assess progress in carrying out the
  Roadmap and make revisions in the convergence charts
  and priorities, using information provided by the
  research planning coordinator;

- Serve as a resource group for the research planning
  coordinator, providing assistance in obtaining
  information about ongoing research and potential
  funding sources for planned research;

- Monitor research progress within the represented
  organizations to assure plan responsiveness; and

- Facilitate the exchange of information on research,
  assisting in obtaining broader input when needed and
  assuring that dissemination is responsive to organi-
  zational needs.

Ideally, the annual review process would take place in
April in order to have optimum effect on the funding cycle.
If specific priorities for the coming year could be estab-
lished by April, the committee would be in the strongest
position to influence the budget allocation processes in the
Army as well as OSD and to maximize support for its priority
research programs.

Since the Convergence Charts and the results of the
initial prioritization process should require only relative-
ly minor modification from year to year, this process should
not be overly burdensome--probably no more so than previous
efforts to develop research plans each year. DAPE-CP and
ARI have already made excellent strides toward a coordi-

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nated, planned research effort. Completion of the proposed prioritization process and implementation of the key features of the research management system described here should lead to the incorporation of a strong and productive civilian personnel research program.

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APPENDIX A - STUDY PARTICIPANT LIST

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APPENDIX B - INTERVIEW GUIDES

ROADMAP RESEARCH INTERVIEW

Interview No. _____

Name of Interviewee _____   Date _____

_____   Interviewer _____

Position and   _____
Responsibilities   _____
                    _____
                    _____

Note: Prior to the interview, the respondent will be given a copy
        of the relevance tree and background information about
        Roadmap research. They will be asked to respond to each
        objective in the order in which they see them as being most
        important. Point out that "Developing personnel" is rele-
        vant to both maintenance and productivity.

Objective A: Maintain Qualified and Representative Workforce
              Tailored to Army Needs.

There are three subobjectives to Objective A: Recruiting, Retain-
ing and Developing the workforce.

A1.   What additional information/research is needed in order to
      more effectively recruit qualified and representative
      personnel?

A2.   What additional information/research is needed in order to
      more effectively manage retention and separation of
    . personnel?   .

A3. What additional information/research is needed in order to more effectively develop supervisory and non-supervisory personnel?

A4. Do you know of any studies or research efforts in these areas which might be useful?

Objective B: Maximize Productivity of Civilian Workforce.

There are three subobjectives to Objective B: Developing more
effective policy and procedures, motivating personnel, and, again,
developing personnel.

B1.   What additional information/research is needed in order to
      develop more effective policy for civilian personnel?   To
      develop better procedures?

B2.   What additional information/research is needed in order to
      more effectively motivate personnel?

B3.   What research is needed in order to develop supervisory and
      non-supervisory members of the workforce so that they are
      more productive?

B4.   Do you know of any studies or research efforts in these areas
      which is already available and which might be useful?

3

Objective C: Ensure most effective utilization of Civilians
               Within the Total Army.

Objective C has three subobjectives: determining appropriate
functions, ascertaining future needs, and ensuring military-
civilian working relationships.

C1.   What information/research is needed in order to determine
      appropriate functions in peacetime?   During mobilizations?

C2.   What information/research is needed in order to ascertain
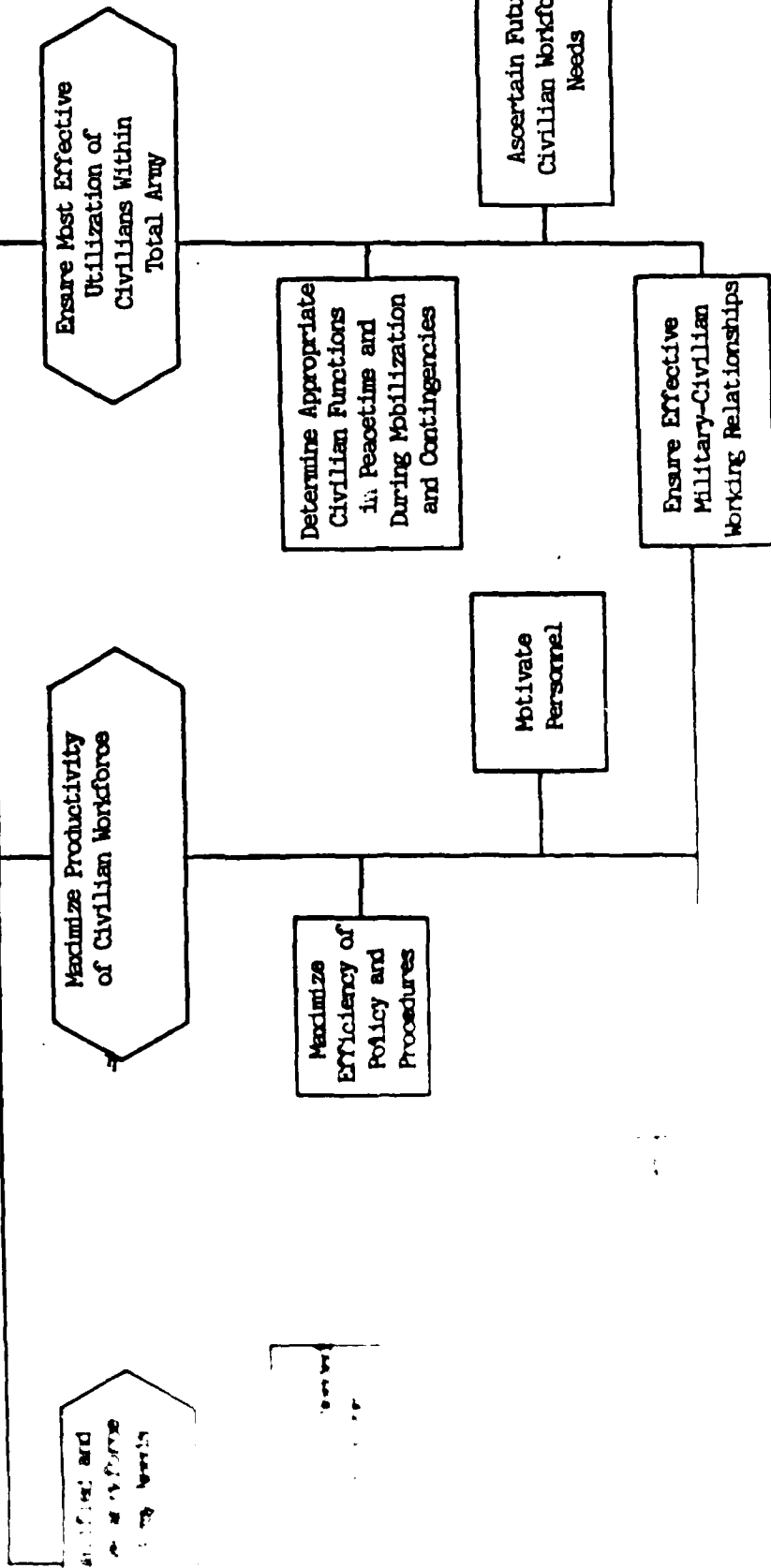   future workforce needs?

C3.   What information/research is needed so as to ensure more
      effective military-civilian working relationships?

C4.   Do you know of any studies or research efforts which has been
      done in these areas which might be useful?

D. Is there any additional research which has not been mentioned which you think should be pursued?

GOAL, OBJECTIVES AND ENABLING OBJECTIVES OF
THE ARMY CIVILIAN PERSONNEL PROGRAM

Maximize Contribution of CONUS and OCONUS Civilian Workforce to the Accomplishment of the Army Mission Over Time

Ensure Most Effective Utilization of Civilians Within Total Army

Ascertain Future Civilian Workforce Needs

Determine Appropriate Civilian Functions in Peacetime and During Mobilization and Contingencies

Ensure Effective Military-Civilian Working Relationships

Maximize Productivity of Civilian Workforce

Motivate Personnel

Maximize Efficiency of Policy and Procedures

ARMY ROADMAP FOCUS GROUP

June - July 1986

A-1   Given your own experience and knowledge about the
        recruitment process in the Army civilian personnel
        system, what does management need to know in order to
        more effectively recruit qualified and representative
        personnel? [Probe: pay, benefits, selection time,
        selection process]

A-2   Again, using your own experience and knowledge, what does
        management need to know in order to retain personnel? In
        order to separate non-productive personnel? [Probe:
        pay, benefits, retirement, mobility, career progression,
        survey p. 1 - 2]

A-3/B-3 What additional information or knowledge should managers
        have in order to more effectively develop individuals to
        become managers? What about developing non-supervisory
        personnel? [Probe: training]

B-1   Can you think of any policy or procedural changes which
        would contribute to higher productivity of your work-
        force? [Probe: retirement, health insurance]

B-2   What information do managers need to have in order to
        more effectively motivate personnel in your situation?

C-3   What information is needed so that the Army can ensure
        effective military/civilian working relationships?
        [Probe: "2nd class citizens," performance appraisals]

C-4   Given the topics we have discussed - recruitment, reten-
        tion, training and career development, policy or proce-
        dural changes, motivation, military/civilian relation-
        ships, do you know of any studies or research efforts
        which have been done in any of these areas?

END

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